




Food Safety

Culinary Directions Part 1



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Introduction to Food Safety

Food Safety is one of the basic responsibilities of all nutrition employees. This lesson will focus on basic food safety hazards that can occur in a school nutrition program and how school nutrition employees can use good food handling practices to minimize or eliminate a food safety hazard from occurring.

Objectives

1. Describe why food safety is a top priority in school nutrition programs
2. Define foodborne illness and foodborne illness outbreak
3. Identify biological, chemical and physical hazards
4. Identify how to prevent biological, chemical, physical hazards
5. Describe the temperature danger zone

Types of Hazards

There are three types of hazards that can cause food to be unsafe: biological, chemical and physical hazards. School nutrition employees have the responsibility to identify and minimize hazards in the food they serve.

Biological Hazards

Biological hazards occur when bacteria, viruses, molds, yeast or parasites contaminate food. Controlling time and temperature of food is critical for minimizing biological hazards. Microorganisms grow rapidly between the temperatures of 41F and 135F. This is known as the temperature danger zone.

Preventing Biological Hazards

1. Follow good personal hygiene practices identified in the standard operating procedures (SOPs).
 - a. Wear clean uniforms and aprons.
 - b. Follow appropriate handwashing and personal hygiene practices.

- c. Use gloves for handling ready to eat foods.
- 2. Purchase food from approved sources.
 - a. Require documentation that proves vendors follow a food safety program based on HACCP principles or good manufacturing practices.
 - b. Include food safety requirements on bid specifications.
- 3. Follow good receiving practices.
 - a. Discard any containers that are dented, bulging, or cracked.
 - b. Make sure that all food packaging is intact. If not, discard the product.
- 4. Control time and temperature of food.
 - a. Store foods at the appropriate temperature.
 - i. Freezer 0F or below
 - ii. Refrigerator/ Cooler 40F or below
 - iii. Dry Storage 50-70F
 - b. Limit the time that food is at room temperature during preparation.
 - c. Thaw foods using proper thawing methods.
 - d. Cook to the appropriate internal cooking temperature.
 - e. Hold hot food at 135F or above. Hold cold food at 41F or below.
 - f. Check the temperature of food at the beginning and end of transportation.
 - g. Cool food properly.
 - h. Reheat food properly.

Check and record time and temperature following monitoring procedures for your foodservice operation.

Physical Hazards

Physical hazards occur when a foreign object gets into food accidentally, or natural objects are left in food. Physical hazards can get into food by contamination or poor procedure practices throughout the food chain. Physical contaminants include dirt, hair, nail polish flakes, insects, broken glass, plastic fragments, bones or bits of packaging.

Preventing Physical Hazards

1. Follow written standard operating procedures (SOPs) to minimize the risk of physical hazards.
 - a. Wear hair restraints such as hairnets, hats or caps to minimize the opportunity for hair to fall into food.
 - b. Do not wear nail polish or artificial nails. Polish can flake off and fall into food. Artificial nails can become loose and fall into food.
 - c. Do not wear earrings, necklaces or rings with stones, as these can fall into food.

2. Pay Special attention to the food during preparation to identify physical contaminants.
 - a. Take care to remove and discard all packaging from food.
 - b. Remove all bones when deboning meats
 - c. Look for possible contaminants.
 - d. Remove any toothpicks that might be used in food preparation.
3. Clean, maintain, and use equipment properly.
 - a. Clean and sanitize equipment and utensils after each use.
 - b. Clean blades of can openers after use to ensure metal shavings do not accumulate.
 - c. Use only commercial ice scoops when getting ice from an ice machine or portioning ice.
 - d. Place shields on lights.
 - e. Use shatterproof light bulbs.
4. Use routine pest control administered by a licensed pest control operator to reduce opportunities for pest contamination in food.

Chemical Hazards

Chemical hazards occur when a harmful chemical gets into a food that is then eaten by a person. A variety of chemicals are used to clean and sanitize the school nutrition facility and to control pests. Typically hazardous chemicals include detergents, sanitizers, drying agents, glass cleaners, deliming agents, and pesticides.

Preventing Chemical Hazards

1. Store chemicals away from food.
 - a. Store chemicals in original containers, never in containers that once stored food.
 - b. Make sure labels clearly identify chemical contents of containers.
 - c. Use safety data sheets (SDS) provided by the manufacturer to ensure chemicals are stored and used properly.
 - d. Keep chemicals in a locked storage area and away from food and food supplies.
 - e. Limit access to chemicals to authorized employees.
2. Use chemicals properly.
 - a. Teach employees how to use chemicals.
 - b. Measure chemicals according to manufacturer's recommendations.
 - c. Test sanitizing solutions to make sure that they are at the appropriate concentration.
3. Wash hands thoroughly after using chemicals.
4. Hire a licensed pest control operator to use pesticides.

Identify and Preventing Hazards

Directions: Write an example of each type of hazard in the designated sections. Then, write examples of how to control each type of hazard.

Examples of Hazards

Biological	Physical	Chemical

How to Prevent Hazards



Biological	Physical	Chemical

Temperature Danger Zone

The temperature danger zone is the temperature range in which microorganisms grow quickly and sometimes reach levels that can make people ill. School nutrition employees must maintain appropriate temperatures throughout the food process, from receiving, until the food is served to children. Temperature control is a key component of a school food safety program.

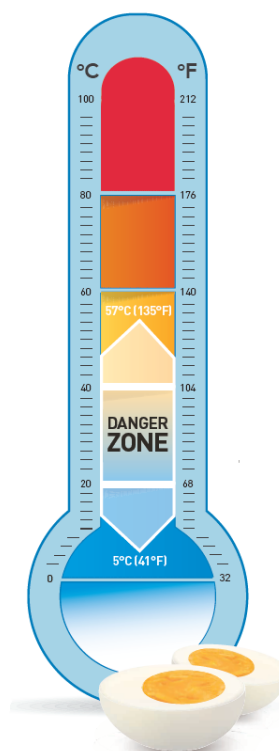
The *FDA Food Code* has identified the temperature danger zone as 41F-135F. The saying “keep hot food hot and cold food cold” is based on the importance of keeping food out of the temperature danger zone. In other words, cold food must be kept at 41F or below and hot foods must be kept at 135F or above. It is important to limit the amount of time that foods served cold or hot are in the temperature danger zone.

Remember to:

- Cook, hold, serve and chill foods at proper temperatures.
- Use a clean, sanitized and calibrated thermometer to take food temperatures.
- Record temperatures.
- Maintain temperature logs.

Maintain temperatures at each operational step in the food service process.

1. Receiving- Receive refrigerated foods at 41F or below, and frozen foods at 32F or below.
2. Storing- Store refrigerated foods at 41F or below, and store frozen foods at 0F or below.
3. Preparing- Limit the time that food is in the temperature danger zone during preparation. Batch cooking is the best way to limit time.
4. Cooking- Cook food to the appropriate internal temperature.
5. Holding- Hold cold foods at 41F or below and hot foods at 135F or above.
6. Serving- Serve cold food below 41F and hot food above 135F.
7. Cooling- cool foods as quickly as possible. The *FDA Food Code* requires that foods be cooled from 135F-70F within 2 hours and from 70F-41F or below within 4 hours. The total cooling process should take no more than 6 hours.
8. Reheating- reheat leftover foods to 165F for 15 seconds within 2 hours.
9. Transporting- transport cold foods at 41F or below and hot foods at 135F or above.



Prevention of Foodborne Illness

Food safety is one of the basic responsibilities of all school nutrition employees. Research conducted by the U.S Food and Drug Administration (FDA) shows that basic food safety practices need to be improved. Active managerial control of foodborne illness risk factors was recommended by the FDA. Areas identified as most in need of improvement included employee handwashing, cold holding, date marking, and cleaning and sanitizing of food contact surfaces. Thus, three key areas that need to be improved in order to prevent foodborne illness include:


- Employee personal hygiene
- Prevention of contamination
- Time and temperature control

Objectives

1. Describe ways in which harmful bacteria or pathogens can contaminate food.
2. List good personal hygiene practices that should be followed by school nutrition employees.
3. Demonstrate proper handwashing procedures to minimize hand to food cross contamination.
4. List times when school nutrition employees should wash their hands.
5. Describe proper glove use.
6. Describe how to use and calibrate a food thermometer.
7. Describe ways to minimize food to food cross contamination and equipment to food cross contamination.
8. List the responsibilities of school nutrition managers in preventing foodborne illness.
9. Describe the types of illness and symptoms of illness that food handlers must report to their supervisors.

Safe Food Process

1. Purchasing
 - a. Buy from reputable vendors.
 - b. Include food safety standards in purchasing agreements.
2. Receiving
 - a. Keep the receiving area clean.

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- b. Inspect the delivery truck. Make sure it is clean and free of odors. Check food temperatures, paying particular attention to frozen and refrigerated items.
 - c. Look for signs of contamination and container damage.
 - d. Check for separation between raw and ready to eat or prepared foods during transport.
 - e. Store foods immediately.
 - 3. Storing
 - a. Use the first in first out method (FIFO).
 - b. Store product in original packaging. Label foods with delivery date.
 - c. Keep raw foods separate from cooked or ready to eat foods.
 - d. Store food at least 6 inches off the floor and 6 inches away from the wall.
 - e. Keep storage areas clean, dry and pest free.
 - f. Store chemicals away from foods and food-related supplies.
 - g. Maintain, monitor and record temperatures in storage areas (refrigerator, freezer and dry storage).
 - 4. Preparing
 - a. Wash hands frequently, properly and at appropriate times.
 - b. Avoid cross contamination.
 - c. Keep food out of the temperature danger zone.
 - d. Thaw foods properly.
 - 5. Cooking
 - a. Avoid cross contamination.
 - b. Cook foods to the proper internal temperature.
 - c. Monitor and record food temperatures.
 - d. Monitor the temperature of hot and cold holding equipment.
 - 6. Serving and Holding
 - a. Avoid cross-contamination.
 - b. Keep foods out of the temperature danger zone.
 - c. Monitor and record food temperatures.
 - d. Monitor the temperature of the hot and cold holding equipment.
 - 7. Cooling
 - a. Speed up cooling by stirring frequently, dividing food into smaller quantities, and using shallow or stainless steel pans.
 - b. Use clean and calibrated food thermometers.
 - c. Monitor and record food temperatures.
 - 8. Reheating
 - a. Reheat leftover foods to an internal temperature of 165F for 15 seconds within 2 hours or less.
 - b. Monitor and record internal temperatures of food.
 - c. Never reheat in hot holding equipment.

Personal Hygiene

Good personal hygiene is a basic requirement for implementing a food safety program. All school nutrition employees must follow the district's SOP for personal hygiene. Poor personal hygiene is a risk factor that must be controlled in all types of foodservice operations.

Personal Hygiene Practices

- Report to work in good health, report any symptoms of illness.
 - Treat and bandage wounds or sores.
- Report to work clean and dressed in appropriate work attire.
 - Keep fingernails clean, trimmed without nail polish or artificial nails.
 - Do not wear jewelry such as necklaces, earrings or rings with stones or grooves.
 - Wear a clean uniform, apron and slip resistant closed toed shoes.
 - Change aprons as they become soiled throughout the day.
 - Wear hair restraints such as a hairnet or cap.
- Eat, drink, or chew gum only in designated break areas where food or food contact surfaces may not become contaminated.
- Wash hands and change gloves properly and at appropriate times.

Tasting Foods

- Place a small amount of food into a separate container.
- Step away from exposed food and food contact surfaces.
- Use a teaspoon to taste the food, immediately take the used container and spoon to the dishroom.
- Never reuse a spoon that has been used for tasting.
- Wash hands immediately.

Personal Hygiene

(Sample SOP)

PURPOSE: To prevent contamination of food by school nutrition employees.

SCOPE: This procedure applies to school nutrition employees who handle, prepare, or serve food

KEY WORDS: Personal Hygiene, Cross Contamination, Contamination

INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Follow the Employee Health Policy. (Employee Health Policy is not included in this resource.)
4. Report to work in good health, clean, and dressed in clean attire. Report any illnesses to your manager.
5. Change apron when it becomes soiled.
6. Wash hands properly, frequently, and at the appropriate times.
7. Keep fingernails trimmed, filed, and maintained.
8. Do not wear artificial fingernails and fingernail polish.
9. Wear single-use gloves if artificial fingernails or fingernail polish are worn.
10. Do not wear any jewelry except for a plain ring such as a wedding band.
11. Treat and bandage wounds and sores immediately. When hands are bandaged, single-use gloves must be worn.
12. Cover a lesion containing pus with a bandage. If the lesion is on a hand or wrist, cover with an impermeable cover such as a finger cot or stall and a single-use glove. Show a supervisor any lesion before working.
13. Eat, drink, or chew gum only in designated break areas where food or food contact surfaces may not become contaminated.
14. Taste food the correct way:
 - Place a small amount of food into a separate container.
 - Step away from exposed food and food contact surfaces.
 - Use a teaspoon to taste the food. Remove the used teaspoon and container to the dish room. Never reuse a spoon that has already been used for tasting.
 - Wash hands immediately.
15. Wear suitable and effective hair restraints while in the kitchen.

MONITORING:

1. The kitchen supervisor will inspect employees when they report to work to be sure that each employee is following this SOP.
2. The kitchen supervisor will monitor that all school nutrition employees are adhering to the personal hygiene policy during all hours of operation.

CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Discard affected food.

VERIFICATION AND RECORD KEEPING:

The school nutrition manager will verify that school nutrition employees are following this SOP by visually observing the employees during all hours of operation. The school nutrition manager will complete the Food Safety Checklist daily. School nutrition employees will record any discarded food on the Damaged or Discarded Product Log. The Food Safety Checklist and Damaged or Discarded Product Logs are to be kept on file for a minimum of 1 year.

DATE IMPLEMENTED: _____ **BY:** _____

Handwashing

Handwashing is the single most important practices in any school nutrition program. School nutrition employees can improve the safety of the food they serve by washing their hands frequently, correctly, and at the appropriate times.

Foodborne illnesses are transmitted by food handlers that contaminate food and food contact surfaces. Individuals who handle food when they have a foodborne illness, gastrointestinal illness, infected lesion or are around someone who is ill can pass along these illnesses. Individuals can simply touch a surface that is contaminated with a bacteria or virus and pass that along to others. Handwashing minimizes the risk of passing along bacteria or viruses that can cause foodborne illnesses.



Employees shall keep their hands and exposed portions of their arms clean.

Wash hands after each visit to the toilet
&
after any other probable contamination

Hand Cleaning Procedure

Food employees shall clean their hands and exposed portions of their arms for at least 20 seconds, using soap in a hand wash sink.

Fingers, finger tips, areas between the fingers, hands and arms shall be vigorously lathered and scrubbed for 10 to 15 seconds, followed by;

Thorough rinsing under clean, running warm water; and

Immediately followed by thorough drying with individual, disposable towels or a heated hand-drying device.

When to Wash Hands

Before

- Beginning work, either at the start of the shift or after breaks.
- Moving from one food preparation area to another.
- Putting on or changing gloves.

After

- Using the restroom.
- Sneezing, coughing, or using a tissue.
- Touching hair, face or body.
- Handling raw meats, fish, or poultry.
- Eating, drinking or chewing gum.
- Sweeping, mopping, wiping tables or counters.
- Washing or handling dirty dishes, equipment or utensils.
- Handling money.
- Handling trash .
- Any time that hands could have become contaminated.

Use of Disposable Gloves

Many operations use single use gloves when handling food. When gloves are used properly they can keep food safe by creating a barrier between hands and food. However, single use gloves should never be used in place of handwashing.

Proper Use of Gloves

- Wash hands before and after use of disposable gloves.
- Wear gloves when preparing and serving ready to eat foods.
- Change gloves and wash hands frequently and between tasks.
- Change gloves and wash hands between handling raw meat and ready to eat foods.
- Change gloves and wash hands after sneezing, using a tissue, coughing, touching hair, face or body or other contact with germs.
- Never handle money and food while wearing the same gloves.
- Never re-use or wash gloves. Dispose of gloves after use.

Washing Hands

(Sample SOP)

PURPOSE: To prevent foodborne illness by contaminated hands.

SCOPE: This procedure applies to anyone who handles, prepares, and serves food.

KEY WORDS: Handwashing, Cross Contamination

INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Post handwashing signs or posters in a language understood by all school nutrition employees near all handwashing sinks, in food preparation areas, and restrooms.
4. Use designated handwashing sinks for handwashing only. Do not use food preparation, utility, and dishwashing sinks for handwashing.
5. Provide warm running water, soap, and a means to dry hands. Provide a waste container at each handwashing sink or near the door in restrooms.
6. Keep handwashing sinks accessible anytime employees are present.
7. Wash hands:
 - Before starting work
 - During food preparation
 - When moving from one food preparation area to another
 - Before putting on or changing gloves
 - After using the toilet
 - After sneezing, coughing, or using a handkerchief or tissue
 - After touching hair, face, or body
 - Eating, drinking, or chewing gum
 - After handling raw meats, poultry, or fish
 - After any clean up activity such as sweeping, mopping, or wiping counters
 - After touching dirty dishes, equipment, or utensils
 - After handling trash
 - After handling money
 - After any time the hands may become contaminated

INSTRUCTIONS, continued:

8. Follow proper handwashing procedures as indicated below:
 - Wet hands and forearms with warm, running water at least 100 °F and apply soap.
 - Scrub lathered hands and forearms, under fingernails, and between fingers for at least 10-15 seconds. Rinse thoroughly under warm running water for 5-10 seconds.
 - Dry hands and forearms thoroughly with single-use paper towels.
 - Dry hands using a warm air hand dryer.
 - Turn off water using paper towels.
 - Use paper towel to open door when exiting the restroom.
9. Follow FDA recommendations when using hand sanitizers. These recommendations are as follows:
 - Use hand antiseptics, also called hand sanitizers, only after hands have been properly washed and dried.
 - Use only hand sanitizers that comply with the *FDA Food Code*. Confirm with the manufacturers that the hand sanitizers used meet these requirements.
 - Use hand sanitizers in the manner specified by the manufacturer.

MONITORING:

1. A designated employee will visually observe the handwashing practices of the school nutrition employees during all hours of operation.
2. The designated employee will visually observe that handwashing sinks are properly supplied during all hours of operation.

CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Ask employees that are observed not washing their hands at the appropriate times or using the proper procedure to wash their hands immediately.
3. Retrain employee to ensure proper handwashing procedure.

VERIFICATION AND RECORD KEEPING:

The school nutrition manager will complete the Food Safety Checklist daily to indicate that monitoring is being conducted as specified. The Food Safety Checklist is to be kept on file for a minimum of 1 year.

DATE IMPLEMENTED: _____ **BY:** _____

Flash of Food Safety: Handwashing Video Guide

Directions: Complete the following questions while watching the handwashing videos.

1. Why is handwashing important?
2. When should you wash your hands? Check all that apply.
 - ☐ After using the restroom.
 - ☐ Before putting on gloves.
 - ☐ After handling animals.
 - ☐ After touching your hair, face, or body.
3. Where should hands be washed? Check all that apply.
 - ☐ In a three compartment sink.
 - ☐ In a mop sink.
 - ☐ In a handwashing sink.
 - ☐ In a food prep sink.
4. How long should you lather your hands, between your fingers and your forearms?
5. What is the proper way to turn off the sink after you have washed your hands?

Thermometers

Thermometers are essential tools in any school nutrition program, and are necessary to implement a food safety program. School nutrition employees should be trained to properly use and calibrate thermometers.

Thermometers are designed for different uses and different temperature ranges. Food thermometers need to measure temperatures between 0F and 220F. The following page contains information on specific types of thermometers.

How to Use Thermometers

- Clean and sanitize thermometers before each use.
 - Wash the stem of the thermometer and sanitize by dipping the stem into sanitizing solution or wiping with a sanitizing wipe, allow to air dry.
- Store food thermometers in an area that is clean and where they are not subject to contamination.
- Check and change batteries in digital thermometers on a routine basis.

How to Take Temperatures

Measure the internal temperature of food by inserting the stem of the thermometer into the thickest part of the food, be sure to cover the sensor. Wait for the dial or digital indicator to stabilize and hold for 15 seconds. Be sure to use the correct type of thermometer when checking food temperatures.

Meat

- Roast- Insert thermometer in the middle of the roast avoiding any bones.
- Poultry- Insert thermometer in the thickest part of avoiding any bones.
- Casseroles- Check temperature in the center as well as several other points.
- Thin Meats- Use a thermometer that is tip sensitive for accurate results.

Milk

- Open a carton and insert the thermometer at least 2 inches into the milk.

Packaged foods

- Insert the thermometer between two packages without puncturing the package.

Recording Temperatures

When food temperatures are taken, they should be recorded on the production record or on a separate cooking and reheating log.

Types of Thermometers

Thermometer Description	Advantages/Disadvantages
Bimetallic Stemmed <ul style="list-style-type: none"> Used to check internal temperatures of food Range of 0–220 °F Sensing area is from the tip to a half-inch past the dimple on the stem. It is important to insert the stem to above the dimple to get an accurate reading. 	Advantages <ul style="list-style-type: none"> Inexpensive Readily available Easy to calibrate Disadvantages <ul style="list-style-type: none"> Not tip sensitive—sensing area is about 2" Temperatures averaged over sensing area Not effective for thin foods, such as hamburger patties Loses calibration with physical shock such as dropping Dial may be difficult to read
Bimetallic Stemmed, oven-safe meat <ul style="list-style-type: none"> Used in muscle meats, such as roasts, while cooking in oven Range of 130–190 °F Inserted 2-2 ½" into thickest part of the muscle Can remain in meat during the entire cooking process 	Advantages <ul style="list-style-type: none"> Monitors safe internal cooking temperature so recommendations are met Monitors temperatures for quality of product Disadvantages <ul style="list-style-type: none"> Heat conduction of metal stem can cause false high readings (especially if inserted close to bone) Not effective for thin meats Loses calibration with physical shock, such as dropping
Digital Stemmed (Thermistor) <ul style="list-style-type: none"> Used to check internal temperatures of food 	Advantages <ul style="list-style-type: none"> Gives fast readings Easy to read Tip sensitive—can measure temperature of thick and thin foods Disadvantages <ul style="list-style-type: none"> Not all models can be calibrated

Thermometer Description	Advantages/Disadvantages
<p>Thermocouple</p> <p>Used with probes of various types:</p> <ul style="list-style-type: none"> • Immersion—measures temperature of liquids • Penetration—measures internal temperature of solid or liquid food • Surface—measures surface temperatures, such as griddle tops 	<p>Advantages</p> <ul style="list-style-type: none"> • Digital temperature reading • Tip sensitive • Variety of probes are available • Provides rapid readings • Durable <p>Disadvantages</p> <ul style="list-style-type: none"> • May be expensive to calibrate • Accuracy may vary due to signal or change in voltage • Accuracy seems to vary proportional to cost
<p>Infrared</p> <ul style="list-style-type: none"> • Designed to take surface temperatures from up to 4 feet away • Provides quick check of temperatures at receiving • Remove barriers because glass and shiny surfaces affect readings 	<p>Advantages</p> <ul style="list-style-type: none"> • Fast • Accurate • Nondestructive, noncontact measurement of temperature • Eliminates cross contamination <p>Disadvantages</p> <ul style="list-style-type: none"> • Cannot measure internal temperatures • Environmental conditions, such as relative humidity, affect accuracy • Accuracy is affected by surface emissivity (ability of a surface to emit heat by radiation; varies by metal type and surface color and polish) and shiny surfaces • May be expensive to calibrate

Thermometer Description	Advantages/Disadvantages
<p>Temperature Sensitive Strips (such as T-Sticks®)</p> <ul style="list-style-type: none"> • Single-use • Designed for specific internal temperatures 	<p>Advantages</p> <ul style="list-style-type: none"> • Accurate • Easy to use • Fast • Time savings—does not require calibration and sanitizing • Available for a variety of temperatures • Reads temperatures within 5 seconds • Eliminates possibility for cross contamination • Temperature indicator can be saved on temperature documentation forms as evidence that temperatures were checked <p>Disadvantages</p> <ul style="list-style-type: none"> • Expensive because of single-use design • Several different ones are needed, depending on use. For example, T-Sticks® are available for 140 °F, 160 °F, 165 °F, and 170 °F.

Source: Adapted from Institute of Child Nutrition. (2009). *Thermometer Information Resource*. University, MS: Author.

Calibrating Thermometers

Food temperatures must be checked throughout the food preparation process, and the thermometers used must be accurate. School nutrition employees are responsible for checking and maintaining the accuracy of thermometers.

Thermometers that are not accurate will give misleading information. For example, if you use a thermometer that registers 10F higher than the actual temperature, you would cook ground beef to 145F instead of 155F. This could cause a foodborne illness since the ground beef was not cooked to the recommended internal cooking temperature.

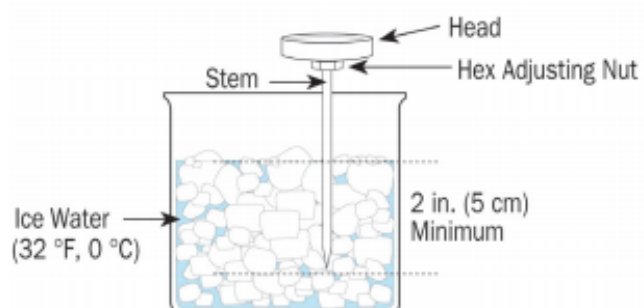
When to Calibrate Thermometers

- Thermometers can lose calibration over time so it is important to calibrate at least weekly.
- Many thermometers can lose calibration with physical shock, such as being dropped. It is important to calibrate thermometers when they are dropped.
- Local policy may indicate that thermometers should be calibrated more frequently, always use the most restrictive policy.

How to Calibrate Thermometers

Ice water method

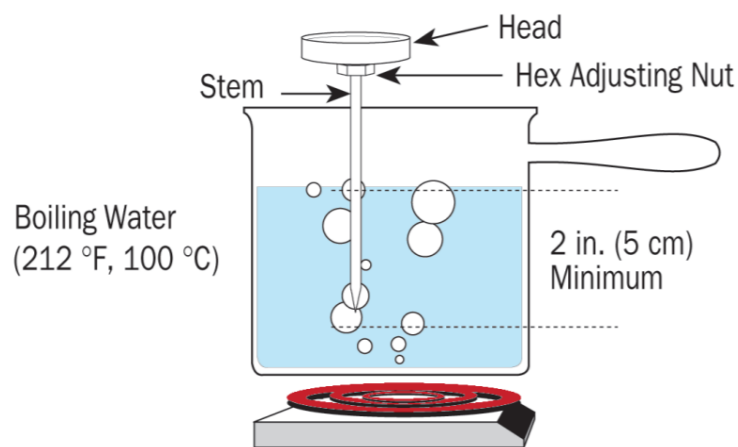
1. Fill a 2 quart measuring cup with ice.
2. Add water to within 1 inch of the top of the container.
3. Stir mixture.
4. Let sit for one minute, this allows for the water and ice temperatures to stabilize.
5. Place the thermometer in the container so that the sensing area of the stem or probe is completely submerged over the dimple.
6. Keep the thermometer from touching the sides or bottom of the container.
7. Let the thermometer stay in the ice water for 30 seconds or until the dial stops moving.
8. Place the calibration tool on the adjusting nut. Rotate the nut until the dial reads 32F.
 - a. Some digital thermometers and thermocouples have a reset button.



Boiling water method

1. Fill a saucepan or stockpot with water.
2. Bring water to a rolling boil.
3. Place the thermometer in the container so that the sensing area of the stem or probe is completely submerged over the dimple.
4. Do not let the thermometer stem/probe touch sides or bottom of the container.
5. Let the thermometer stay in the boiling water for 30 seconds or until the dial stops moving.
6. Place the calibration tool on the hex adjusting nut and rotate until the thermometer dial reads 212F.
 - a. Some digital thermometers and thermocouples have a reset button.

Note: The boiling point of water is about 1F lower for every 550 feet above sea level. If you are in areas with high altitude, the temperature for calibration should be adjusted. For example, if you were at 1100 feet above sea level, the boiling point of water would be 210F.



Documentation

Each time thermometers are calibrated, the process should be documented. The food safety program should include a form for documenting the calibration process for each thermometer.

Thermometer Calibration Log

Month/Year

Location

Instructions: A designated foodservice employee shall place the thermometer in an ice slurry for approximately 1 minute. The thermometer will be adjusted to with 2 degrees of 32 degrees, if necessary.

[illegible]



Flash of Food Safety: Calibrating a Thermometer Video Guide

Directions: Complete the following questions while watching the calibrating thermometers videos.

1. How often should thermometers be calibrated?
2. Thermometers may become inaccurate after physical shock. Give an example of physical shock.
3. True or False: When using the ice method the stem or probe should touch the bottom of the container.
4. Using the boiling method, how long should a thermometer stay in the boiling water?
5. Why is it important to record when you calibrate thermometers?

Microorganism Basics

Microorganisms are everywhere in our environment. Some of them can make people sick. It is important to know the common causes of foodborne illness and the ways that school nutrition employees can prevent growth of microorganisms.

Objectives

1. List common causes of foodborne illnesses.
2. List common foodborne illnesses.
3. Describe ways that school nutrition employees can prevent foodborne illnesses.
4. Identify guidelines for responding to a reported foodborne illness.

Bacteria/Virus	Symptoms	Where the Microorganism Can Be Found	Prevention
Shiga toxin-producing <i>Escherichia coli</i> (STEC)	Symptoms begin 3-8 days after eating contaminated food, can last 2-9 days, and include: <ul style="list-style-type: none"> • cramping, • diarrhea (watery or bloody), • vomiting, and • hemolytic uremic syndrome (HUS). 	<ul style="list-style-type: none"> • In intestinal tract of animals, particularly cattle and humans • Raw or undercooked ground beef • Raw milk or dairy products • Unpasteurized apple cider or juice • Imported cheeses • Dry salami • Uncooked fruits and vegetables 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all beef to correct internal temperature, and test with a thermometer. • Use only pasteurized milk, dairy products, or juices. • Wash all produce in cold, running water. • Cool foods properly.
Salmonellosis <i>Salmonella</i> spp. Nontyphoidal <i>Salmonella</i>	Symptoms begin 6-72 hours after eating contaminated food, last 4-7 days, and include <ul style="list-style-type: none"> • stomach cramps, • headache, • nausea, • fever, • diarrhea, • vomiting, and • severe dehydration (infants and elderly). 	<ul style="list-style-type: none"> • Raw meats, poultry, and unpasteurized eggs • *Milk and dairy products • Fish, shrimp • Sauces and salad dressing • Sliced fresh fruits and vegetables such as melons, strawberries, tomatoes • Raw sprouts • Intestinal tract of humans and animals *unpasteurized 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all foods to correct internal temperature and test with a thermometer. • Hold food at 135 °F or above. • Cool foods properly. • Thoroughly wash produce. • Use only pasteurized milk and dairy products.

Bacteria/Virus	Symptoms	Where the Microorganism Can Be Found	Prevention
<i>Salmonella</i> Typhi <i>Typhoid Fever</i>	<p>Symptoms of typhoid fever usually begin in 1 to 3 weeks, but may be as long as 2 months after exposure.</p> <p>Symptoms include:</p> <ul style="list-style-type: none"> • high fever, • stomach pain, • diarrhea or constipation, • aches, • headaches, • fatigue, • loss of appetite, and • rash of flat, rose-colored spots. 	<ul style="list-style-type: none"> • In the human intestinal tract • Untreated or fecal-contaminated water or ice • Raw fish, meats, and poultry • Unpasteurized milk and dairy products • Raw vegetables, fresh fruit, and salads washed with untreated or sewage-contaminated water 	<ul style="list-style-type: none"> • Follow handwashing guidelines. • Avoid bare hand contact with ready-to-eat and ready-to-serve foods. • Report symptoms of diarrhea and vomiting, diagnosis of typhoid fever, or exposure within the past 14 days to others with typhoid fever to your school nutrition director. Do not work when you have these symptoms. • Use potable (clean) water for handwashing, cleaning, and sanitizing food contact surfaces and washing produce. • Ensure all foods are purchased from a safe supplier. • Cook all foods to correct internal temperature and test with a thermometer.
Shigellosis <i>Shigella spp</i>	<p>Symptoms begin 1-3 days after eating contaminated food, last up to 2 weeks, and include</p> <ul style="list-style-type: none"> • abdominal pain, • diarrhea containing blood and mucus, • fever, • nausea, • vomiting, • chills, • fatigue, and • dehydration. 	<ul style="list-style-type: none"> • In intestinal tract of humans and polluted water; spread by flies and food handlers • Meat salads • Potato and pasta salads • Lettuce and other raw vegetables • Milk and dairy products • Ready-to-eat foods 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Use water from approved sources. • Control flies. • Maintain storage temperatures. • Cool foods properly.

Bacteria/Virus	Symptoms	Where the Microorganism Can Be Found	Prevention
Norovirus Norwalk-Like Viral Agents	<p>Symptoms begin from 1 to 2 days after eating contaminated food or water, and include:</p> <ul style="list-style-type: none"> • nausea, • vomiting, • diarrhea, • abdominal pain, • headache, • mild fever, and • body aches. 	<ul style="list-style-type: none"> • Contaminated drinking water • Shellfish from contaminated water • Raw vegetables, fresh fruit, and salads contaminated by dirty hands • Contaminated ready-to-eat foods 	<ul style="list-style-type: none"> • Do not work when sick with Norovirus. • Practice good personal hygiene. • Follow procedures for avoiding cross contamination. • Wash all fresh produce which will be served whole, peeled, or cooked, in cold, running water. • Use water from approved sources. • Obtain shellfish from approved health-inspected sources and cook thoroughly. • Cook all foods to required safe internal temperatures and test with a thermometer.
Hepatitis A Hepatovirus	<p>Symptoms may be seen 10 days to almost 2 months after eating contaminated food or water. Symptoms include:</p> <ul style="list-style-type: none"> • fever, • fatigue, • headache, • nausea, • loss of appetite, • vomiting, • stomach pain, and • later jaundice (yellow skin and eyes). 	<ul style="list-style-type: none"> • Human intestinal tract • Contaminated water • Foods contaminated by food handlers, processing plants, foodservice facilities • Foods of particular concern – prepared foods requiring no additional cooking: deli meats, salads, sandwiches, fruit and fruit juices, milk and dairy products, raw fruits and vegetables 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow procedures for avoiding cross contamination. • Wash all fresh produce, which will be served whole, peeled, or cooked, in cold, running water. • Use water from approved sources. • Cook all foods to the required safe internal temperature and test with a thermometer.

Bacteria/Virus	Symptoms	Where the Microorganism Can Be Found	Prevention
Botulism <i>Clostridium botulinum</i>	<p>Symptoms begin 18-36 hours after eating contaminated food and include</p> <ul style="list-style-type: none"> • diarrhea or constipation; • weakness; • dizziness; • double vision or blurred vision; • difficulty speaking, swallowing, breathing; and • paralysis. 	<ul style="list-style-type: none"> • Home-canned foods • Improperly processed foods • Sausages and meats • Canned low-acid foods, such as some vegetables • Untreated garlic in oil • Leftover, unrefrigerated foil-wrapped baked potatoes • Sautéed onions in butter sauce 	<ul style="list-style-type: none"> • Discard damaged cans. • Do not use home-canned foods in a school nutrition establishment. • Do not mix and then store oil and garlic. • Follow rules for time and temperature control. • Sauté onions as needed; do not sauté and then store unrefrigerated for later use. • Do not store leftover baked potatoes in foil wrapping. Unwrap and chill correctly. • Chill foods properly.
Campylobacteriosis <i>Campylobacter jejuni</i>	<p>Symptoms begin 2 to 5 days after eating contaminated food, can last 7 to 10 days, and include</p> <ul style="list-style-type: none"> • diarrhea (watery or bloody), • nausea and vomiting, • abdominal pain, • headache, and • muscle pain. 	<p>Unpasteurized milk and dairy products</p> <ul style="list-style-type: none"> • Raw poultry • Raw beef • Nonchlorinated or fecal-contaminated • Birds and flies can carry and contaminate food 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all poultry, meat, with a thermometer. • Maintain good pest control. • Use only pasteurized dairy products. • Use water from approved sources.

Bacteria/Virus	Symptoms	Where the Microorganism Can Be Found	Prevention
Listeriosis <i>Listeria monocytogenes</i>	<p>Symptoms begin 3-70 days after eating contaminated food; 21-day onset is most common.</p> <p>Symptoms include</p> <ul style="list-style-type: none"> • sudden onset of fever, • muscle aches, • diarrhea or vomiting, • headaches, • stiff neck, • confusion, • loss of balance, and • convulsions. 	<ul style="list-style-type: none"> • In soil, ground water, plants, and intestinal tracts of humans and animals • Unpasteurized milk and cheese • Ice cream • Raw vegetables • Raw and cooked poultry • Raw meat and fish • Prepared and chilled ready-to-eat foods • Deli meats, luncheon meats, hot dogs • Soft cheese such as feta, Brie, Mexican-style cheeses 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all poultry and meat to correct internal temperature and test with a thermometer. • Use only pasteurized milk, dairy products, or juices. • Wash all fresh produce in cold, running water. • Clean and sanitize food contact surfaces. • Maintain temperatures of food.
Clostridium perfringens	<p>Symptoms begin 8-24 hours after eating contaminated food, last 24 hours, and include</p> <ul style="list-style-type: none"> • abdominal cramping and • diarrhea. 	<ul style="list-style-type: none"> • In intestinal tracts of humans and animals • Cooked meat and poultry • Gravy • Beans 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all foods to correct internal temperature and test with a thermometer. • Hold food at 135 °F or above. • Cool foods properly.

Bacteria/Virus	Symptoms	Where the Microorganism Can Be Found	Prevention
<i>Staphylococcus aureus</i>	<p>Symptoms begin 1-4 hours after eating contaminated food, last 2-3 days, and include</p> <ul style="list-style-type: none"> • nausea, • vomiting, • stomach cramping, and • exhaustion. 	<ul style="list-style-type: none"> • Humans and animals main carriers • Leftovers • Meat and poultry • Eggs and egg products • Milk and dairy products • Meat and potato salads • Salad dressings • Sandwich fillings 	<ul style="list-style-type: none"> • Practice good personal hygiene. • Cover burn, cut, or wound with waterproof bandage and wear disposable gloves. • Follow handwashing guidelines. • Follow procedures to avoid cross contamination. • Cook all foods to correct internal temperature and test with a thermometer. • Hold food at 41 °F or below or at 135 °F or above. • Cool foods properly. • Avoid bare hand contact with ready-to-eat foods.

Restricting or Excluding Employees

One of the most important responsibilities of a child nutrition manager is to prevent food contamination. Nutrition employees can pass on microorganisms and contaminate food if they are ill or have been around someone who is ill. It is important that all employees report the following symptoms or conditions to their supervisor.

- Diarrhea .
- Vomiting.
- Sore Throat with a fever.
- Infected wound or cut on exposed areas.
- Jaundice (yellowing of the skin or eyes).
- Diagnosis with a foodborne illness.
- Exposure to a foodborne illness.

Depending on the symptom or diagnosis, the child nutrition manager or director will decide if the employee needs to be restricted or excluded from duties to prevent foodborne illness.

Excluded

Exclusion means a school nutrition employee is not permitted to work in or enter a food preparation area. Food preparation areas include areas where food is received, prepared, stored, packaged, served, transported or purchased.

- Vomiting.
- Diarrhea.
- Jaundice or diagnosed with Hepatitis A.
- Diagnosed with a foodborne illness.
- Sore throat if working with a high risk population.

Restrict

Restriction means a school nutrition employee's activities are limited to prevent the risk of transmitting a disease that is spread through food. A restricted employee cannot handle exposed food, clean equipment, utensils, or unwrapped single serve items. Employees who are restricted may work in storage areas and may clean or perform maintenance task away from food areas.

- Infected throat if not working with a high risk population.
- Infected sore.

Restricting or Excluding Employees

In most cases the school nutrition manager or director can lift restrictions and exclusions. Your district may have specific policies in place regarding when an employee may return to work. In some cases, an approval from a medical provider or the local health department is required to lift a restriction or exclusion. Common practices can be found below.

Symptoms	Exclude or Restrict from school	Return to work
Vomiting Diarrhea	Exclude	Symptom free 24 hours
Sore throat with fever	Restrict/Exclude with High Risk Population	Need written medical release
Infected Sore	Restrict	When infected sore is properly covered with a bandage and single-use glove
Diagnosed with: Hepatitis A virus (jaundice)	Exclude if within 14 days of any symptom, or within 7 days of jaundice	Consult with local health department
Diagnosed with: <i>Salmonella</i> typhi <i>Shigella</i> Nontyphoidal <i>Salmonella</i> (NTS) Shiga toxin-producing <i>Escherichia coli</i> (STEC) Norovirus	Exclude	Consult with local health department

Restrict or Exclude Activity

Directions: For each of the scenarios, decide the best way to respond.

Exclude: A school nutrition employee is not permitted to work in or enter a food preparation area.

Restrict: A school nutrition employee's activities are limited to prevent the risk of transmitting a disease that is spread through food.

	May Work	Exclude	Restrict
Jessica has a cold with watery eyes, sneezing and sniffles.			
Nina is having bouts of vomiting.			
Jorge has a cut on his hand that is infected and uncovered.			
Mia's husband has been diagnosed with a foodborne illness.			
Leonard has a persistent cough.			
Aggie has a sore throat and fever.			
Annette has diarrhea.			
Linda has been diagnosed with norovirus.			
Ben's last episode of diarrhea was 48 hours ago.			

Clean and Sanitary Facilities

Food can become contaminated if you do not keep your facility and equipment clean and sanitized. Cleaning removes food and debris from surfaces. Sanitizing reduces the number of microorganisms or pathogens from surfaces to a safe level.

Objectives

1. List characteristics of a food-safe facility.
2. Describe practices that can be used to control pests.
3. Describe how to mix and test chemical sanitizing solutions.
4. Define clean and sanitize.
5. Describe how to set up and use a three-compartment sink and a mechanical dishwasher.

Cleaning

Cleaners must be stable, noncorrosive and safe to you. Always purchase chemicals from an approved manufacturer and follow the manufacturer's instructions carefully. It is important to store chemicals in the original containers, never store chemicals in food containers. There are a variety of cleaners available, each with a different purpose. These include:

- Detergents.
- Degreasers.
- Delimers.
- Abrasive cleaners.

Sanitize


Food contact surfaces must be sanitized after being washed and rinsed. This can be done using either heat or chemical sanitizing methods.

Heat Sanitizing

For this method, the water must be at least 171°F and items must be soaked for at least 30 seconds. Another way to sanitize items with heat is by running items through a high temperature dish machine.

Chemical Sanitizing

Chemical sanitizers may be sprayed on food contact surfaces or utensils, small equipment and tableware may be dipped in the sanitizing solution. Three common chemical sanitizers



are chlorine, iodine, and quaternary ammonium. Several factors can influence the effectiveness of chemical sanitizers so it is important to follow manufacturers' directions when mixing chemical sanitizer solutions.

Concentration

Sanitizer solution is a mix of sanitizer and water, if the amount of sanitizer is too weak the product will not be effective in reducing the number of microorganisms. Concentration is measured in parts per million (ppm). To check the concentration use a test kit specific to that type and brand of sanitizer.

Temperature

Chemical sanitizers are temperature sensitive, meaning they can become ineffective if the water temperature is too hot or too cold. Follow the manufacturer's recommendations for specific water temperature ranges.

Contact time

Sanitizing solutions must be in contact with food contact surfaces for a specific amount of time to effectively reduce the number of microorganisms. This is referred to as contact time. Follow the manufacturer's recommendations for specific contact time.

Water hardness

Water hardness is determined by the amount of minerals in your water. The hardness can affect how well the chemical sanitizer works. To find out more information about water hardness contact your local municipality. Your supplier can recommend a sanitizer or the correct amount of sanitizer to use for your water.

PH

Water pH can affect sanitizer effectiveness. To find out more information about water pH contact your local municipality. Your supplier can recommend a sanitizer or the correct amount of sanitizer to use for your water.

When to Clean and Sanitize

All food contact surfaces need to be cleaned and sanitized at the following times:

- After they are used.
- After working with raw meats, poultry, or fish and working with ready to eat foods.
- After preparing different types of food.
- Any time items may become contaminated.
- After four hours of constant use.

Equipment should be cleaned and sanitized regularly. Manufacturers will usually provide instructions for when and how stationary equipment should be cleaned and sanitized.

Dishwashing

Tableware, utensils and pots and pans must be cleaned and sanitized after use. Items may be washed by hand in a three compartment sink (manual dishwashing) or by using a dish machine (mechanical dishwashing).

Three compartment sink

Dishwashing is a three step process: wash, rinse, and sanitize. Sanitizing may be done by using hot water or a chemical sanitizing solution. Set up and use a three compartment sink following these steps.

1. In the first compartment, wash with a clean detergent solution at or above 110F unless the manufacturer has a specific temperature recommendation.
2. In the second compartment, rinse with clean water.
3. In the third compartment, sanitize with hot water above 171F or a sanitizing solution. Prior to using, water temperature should be checked with a calibrated thermometer and chemical sanitizer should be tested to ensure effectiveness.
4. Allow for dishes (tableware, utensils, pots and pans) to air dry.

Dish machine

Dishwashing is a three step process: wash, rinse, and sanitize. Sanitizing may be done by using hot water or a chemical sanitizing solution. When setting up and using a dish machine follow the manufacturer's instructions regarding the use of chemicals for cleaning and sanitizing.

- Chemical sanitizing dish machines
 - Uses chemicals to clean and sanitize.
- High temperature dish machines
 - Uses hot water to clean and sanitize.
 - Final sanitizing rinse must reach at least 180F unless otherwise specified.

Cleaning and Sanitizing Food Contact Surfaces

(Sample SOP)

PURPOSE: To prevent foodborne illness by ensuring that all food contact surfaces are properly cleaned and sanitized.

SCOPE: This procedure applies to school nutrition employees involved in cleaning and sanitizing food contact surfaces.

KEY WORDS: Food Contact Surface, Cleaning, Sanitizing

INSTRUCTIONS:

1. Train school nutrition employees on using the procedures in this SOP.
2. Follow state or local health department requirements.
3. Follow manufacturer's instructions regarding the use and maintenance of equipment and use of chemicals for cleaning and sanitizing food contact surfaces. Refer to Storing and Using Poisonous or Toxic Chemicals SOP.
4. If state or local requirements are based on the FDA Food Code, wash, rinse, and sanitize food contact surfaces of sinks, tables, equipment, utensils, thermometers, carts, and equipment:
 - Before each use.
 - Between uses when preparing different types of raw animal foods, such as eggs, fish, meat, and poultry.
 - Between uses when preparing ready-to-eat foods and raw animal foods, such as eggs, fish, meat, and poultry.
 - Any time contamination occurs or is suspected.
5. Wash, rinse, and sanitize food contact surfaces of sinks, tables, equipment, utensils, thermometers, carts, and equipment using the following procedure:
 - Wash surface with detergent solution.
 - Rinse surface with clean water.
 - Sanitize surface using a sanitizing solution mixed at a concentration specified on the manufacturer's label.
 - Place wet items in a manner to allow air drying.
6. If a 3-compartment sink is used, setup and use the sink in the following manner:
 - In the first compartment, wash with a clean detergent solution at or above 110 °F or at the temperature specified by the detergent manufacturer.
 - In the second compartment, rinse with clean water.
 - In the third compartment, sanitize with a sanitizing solution mixed at a concentration specified on the manufacturer's label or by immersing in hot water at or above 171 °F for 30 seconds. Test the chemical sanitizer concentration by using an appropriate test kit.
7. If a dishmachine is used:
 - Check with the dishmachine manufacturer to verify that the information on the data plate is correct.

- Refer to the information on the data plate for determining wash, rinse, and sanitization (final) rinse temperatures; sanitizing solution concentrations; and water pressures, if applicable.
- Follow manufacturer's instructions for use.
- Ensure that food contact surfaces reach a surface temperature of 160 °F or above if using hot water to sanitize.

MONITORING:

School nutrition employees will:

1. During all hours of operation, visually and physically inspect food contact surfaces of equipment and utensils to ensure that the surfaces are clean.
2. In a 3-compartment sink, on a daily basis:
 - Visually monitor that the water in each compartment is clean.
 - Take the water temperature in the first compartment of the sink by using a calibrated thermometer.
 - If using chemicals to sanitize, test the sanitizer concentration by using the appropriate test kit for the chemical.
 - If using hot water to sanitize, use a calibrated thermometer to measure the water temperature. It should be at or above 171 °F. Refer to Using and Calibrating Thermometers SOPs.
3. In a dishmachine, on a daily basis:
 - Visually monitor that the water and the interior parts of the machine are clean and free of debris.
 - Continually monitor the temperature and pressure gauges, if applicable, to ensure that the machine is operating according to the data plate.
 - For hot water sanitizing dishmachine, ensure that food contact surfaces are reaching the appropriate temperature at or above 160 °F by placing a piece of heat sensitive tape on a smallware item or an irreversible registering temperature indicator on a rack and running the item or rack through the dishmachine.
 - For chemical sanitizing dishmachine, check the sanitizer concentration on a recently washed food-contact surface using an appropriate test kit.

CORRECTIVE ACTION:

1. Retrain any school nutrition employee found not following the procedures in this SOP.
2. Wash, rinse, and sanitize dirty food contact surfaces. Sanitize food contact surfaces if it is discovered that the surfaces were not properly sanitized. Discard food that comes in contact with food contact surfaces that have not been sanitized properly.
3. In a 3-compartment sink:
 - Drain and refill compartments periodically and as needed to keep the water clean.
 - Adjust the water temperature by adding hot water until the desired temperature is reached.
 - Add more sanitizer or water, as appropriate, until the proper concentration is achieved.

Cleaning and Sanitizing Food Contact Surfaces, continued
(Sample SOP)

4. In a dishmachine:

- Drain and refill the machine periodically and as needed to keep the water clean.
- Contact the appropriate individual(s) to have the machine repaired if the machine is not reaching the proper wash temperature indicated on the data plate.
- For a hot water sanitizing dishmachine, retest by running the machine again. If the appropriate surface temperature is still not achieved on the second run, contact the appropriate individual(s) to have the machine repaired. Wash, rinse, and sanitize in the 3-compartment sink until the machine is repaired or use disposable single service/single-use items if a 3-compartment sink is not available.
- For a chemical sanitizing dishmachine, check the level of sanitizer remaining in bulk container. Fill, if needed. "Prime" the machine according to the manufacturer's instructions to ensure that the sanitizer is being pumped through the machine. Retest. If the proper sanitizer concentration level is not achieved, stop using the machine and contact the appropriate individual(s) to have it repaired. Use a 3-compartment sink to wash, rinse, and sanitize until the machine is repaired.

VERIFICATION AND RECORD KEEPING:

School nutrition employees will record monitoring activities and any corrective action taken on the Food Contact Surfaces Cleaning and Sanitizing Log. The school nutrition manager will verify that school nutrition employees have taken the required temperatures and tested the sanitizer concentration by visually monitoring school nutrition employees during the shift and reviewing, initialing, and dating the Food Contact Surfaces Cleaning and Sanitizing Log. The log will be kept on file for at least 1 year. The school nutrition manager will complete the Food Safety Checklist daily. The Food Safety Checklist is to be kept on file for a minimum of 1 year.

DATE IMPLEMENTED: _____ **BY:** _____

DISH MACHINE TEMPERATURE LOG

SCHOOL: _____ MONTH: _____

FINAL RINSE TEMP 180°F

[illegible]

Pest Control

Rodents, insects, and other pests can damage food, supplies and facilities. But the greatest danger comes from their ability to spread diseases, including foodborne illnesses.

Prevention is critical in pest control. There are three basic rules to help prevent pests from entering into the facility.

1. Deny pest access to the operation.
 - a. Pests can be brought into the building with deliveries or through building openings.
 - i. Check all deliveries for signs of pest before they enter your operation.
 - b. Ensure all points of access to the building are secure.
 - i. Seal cracks in floors, walls and around pipes.
 - ii. Screen all windows and vents.
2. Deny pest food, water and shelter.
 - a. Throw out trash quickly, keep trash containers clean and in good condition.
 - b. Keep containers tightly covered (indoor and outdoor).
 - c. Store all food and supplies correctly.
 - i. 6 inches off the floor.
 - ii. 6 inches away from the wall.
 - d. Clean up all food and beverage spills immediately, including crumbs and scraps.
3. Work with a licensed pest control operator.

Apply your knowledge:

Directions: Place an X next to each situation that could lead to a pest infestation.

1. ____ Food in the dry-storage room is stored against the wall.
2. ____ Air curtains are installed around the back door of the kitchen.
3. ____ Food is roasted during storage to ensure older food is used first.
4. ____ A dumpster is left open to let it air out.
5. ____ A food delivery is rejected because it has chew marks on the outer packaging.
6. ____ The exterior of the building has a three inch hole, where a pipe was removed.

Case Study: Pest Control at Red Oak High School

Jim began the new school year at Red Oak High School after several years as manager at another school in the district. The week before school started, Jim noticed evidence of pests, including cockroaches and flies. Although the school had been closed for the summer, Jim found out from the principal that the pest control company serviced the school regularly. Jim decided to make some changes to help prevent infestations. Jim first walked around the kitchen to observe where and why pests were in the kitchen. Jim's observations are listed below.

Directions: In the right column, write the change that should be made in order to have a more effective pest control program.

Jim's Observations	Changes to Be Made
1. Fan at the back door does not work.	
2. Unscreened back door does not fit securely when closed.	
3. One bag of rice in storeroom is broken at the bottom and has spilled.	
4. Cases of cans are stored in cardboard cartons.	
5. Pipes from steam-jacketed kettle have space around them.	
6. Garbage cans are not covered at any time of the day.	
7. Loading dock is clean in the middle but the sides are dirty.	
8. Bins of flour and sugar were left half-full over the summer.	
9. The grease trap had not been cleaned and the three-compartment sink drain had overflowed. The overflow had dried during the summer, and an unpleasant odor was obvious.	
10. Safety Data Sheets (SDS) were not available for the cleaning chemicals used in the kitchen.	

Process for Preventing Foodborne Illness

It is important to follow basic food handling practices at each step in the food process. These steps include purchasing, receiving, storing, preparing, cooking, serving and holding, cooling, reheating and transporting. There are specific practices that need to be followed at each step including time and temperature control, personal hygiene, and prevention of contamination.

Objectives

1. Describe how purchasing is related to food safety.
2. List food safety practices that should be followed when receiving food.
3. Describe safe storage practices.
4. Describe safe methods for thawing frozen food items.
5. List food safe practices for preparing food items.
6. Describe food safety guidelines for serving and holding food.
7. List steps for safe cooling of food.
8. List steps for safe reheating of food.

Purchasing

Food must be purchased from approved, reputable suppliers. These suppliers have been inspected by a regulatory authority and will be able to provide you with a copy of the most recent inspection report.



Receiving

Suppliers must deliver food when staff has enough time to complete an inspection. A schedule of approved delivery times should be included in the SFAs bid solicitation and agreed upon as part of the vendor contract. Staff should be trained on food safety guidelines for receiving and provided with the tools they need to complete the task. These tools include purchase orders, thermometers and scales. When receiving a delivery staff should:



1. Complete a visual inspection of the truck. Look for signs of pest or contamination.
2. Continue a visual inspection of the food items. Look for signs of damage to boxes or signs of pests.
3. Check the temperatures of products.
 - a. Meat, fish or poultry- insert the thermometer stem or probe directly into the thickest part of the food.

- b. Reduced oxygen packaging food- insert the thermometer stem or probe between two packages, if packaging allows. Be careful not to puncture the package.
- c. Packaged food- open the package and insert the thermometer stem or probe into the food. The sensing area should be fully immersed without touching the sides or bottom of the container.

Temperatures for Deliveries



Cold Temperature Control Sensitive Food Receive at 41F or below	Live Shellfish Receive at air temperature of 45F and an internal temperature no greater than 50F.
Shucked Shellfish Receive at 45F or lower	Shell Eggs Receive at an air temperature of 45F
Milk Receive at 45F or lower	Frozen Foods Reject if the box or packaging has water stains or fluid. Reject if ice crystals or frozen liquids on the food or packaging.
Hot Temperature Control Sensitive Food Receive at 135F or higher	



- Milk and Shellfish (live and shucked) must be lowered to 41F or below within four hours of being received.

Directions: Use this checklist to evaluate food products during receiving.

Meat and Poultry

Red Meat

Quality, Appearance, Texture

- ☐ USDA inspected stamp
- ☐ Firm and elastic to touch
- ☐ Beef is bright red; pork is light pink

Internal Temperature

- ☐ Fresh meat at or below 41 °F
- ☐ Frozen meat delivered frozen solid

Signs of Spoilage

- ☐ Brown, green, or purple discoloration
- ☐ Black, white, or green spots indicating mold
- ☐ Freezer burn (tan, dried look)
- ☐ Slimy, sticky, or dry feel

Poultry

Quality, Appearance, Texture

- ☐ USDA inspected stamp
- ☐ Firm, meaty flesh

Internal Temperature

- ☐ Fresh poultry at or below 41 °F
- ☐ Fresh poultry surrounded by crushed ice
- ☐ Frozen poultry delivered frozen solid

Signs of Spoilage

- ☐ Purplish or greenish discoloration
- ☐ Abnormal odor
- ☐ Stickiness under wings and around joints
- ☐ Dark wing tips
- ☐ Freezer burn

Eggs

Quality, Appearance, Texture

- ☐ USDA inspected (shield displayed)
- ☐ Clean, dry shells without cracks

Temperature

- ☐ Delivery truck temperature at or below 45 °F

Signs of Spoilage

- ☐ Cracked, checked, or dirty shells

Dairy Products

Milk, Yogurt, Cheese, Butter/Margarine

Quality, Appearance, Texture

- ☐ Pasteurized or ultra-pasteurized
- ☐ Sweet smell
- ☐ Packaging clean and intact

Internal Temperature

- ☐ At 41 °F or below
- ☐ Delivered refrigerated

Signs of Spoilage

- ☐ Sour, moldy odor
- ☐ Check the sell-by-date
- ☐ Mold

Fresh Produce

Quality, Appearance, Texture

- ☐ Little or no dirt
- ☐ Reasonably unblemished
- ☐ Firm texture

Internal Temperature

- ☐ Refrigerated produce between 33 °F and 41 °F
- ☐ Non-refrigerated produce between 50 °F and 60 °F
- ☐ Fresh-cut produce between 33 °F and 41 °F
- ☐ Cut melons at or below 41 °F

Signs of Spoilage

- ☐ Signs of insect infestation
- ☐ Mold
- ☐ Mushiness, wateriness, or wilting
- ☐ Discoloration or blemishes
- ☐ Cuts

Frozen Foods

Quality, Appearance, Texture

- ☐ Packaging intact and clean

Internal Temperature

- ☐ Frozen foods should be frozen solid
- ☐ Insert stem of food thermometer between packages in case

Signs of Spoilage

- ☐ Signs of thawing (liquids at bottom of carton)
- ☐ Signs of thawing and refreezing (ice crystals or ice on boxes)

Canned and Dry Foods

Canned Foods

Quality, Appearance

- ☐ Packaging intact and clean

Signs of Spoilage

- ☐ Swollen, leaking, rusty, or dented cans
- ☐ Flawed seals
- ☐ Label intact

Dry Foods

Quality, Appearance

- ☐ Packaging intact
- ☐ Dry and undamaged

Signs of Spoilage

- ☐ Damp or moldy container
- ☐ Insect infestation

Modified Atmosphere Packaged or Vacuum Packed Foods

Milk, Yogurt, Cheese, Butter/Margarine

- ☐ Insert a food thermometer between two packages, being careful not to puncture packaging; temperature as specified by manufacturer.
- ☐ Examine color indicators on package to see if the temperature was maintained.

Storing

Proper storing of food will help maintain food quality and safety. Employees who store food play an important role in a school nutrition program by following proper storing practices. Food is a perishable product so it is important to store it at the appropriate temperature for an appropriate time. Dry storage areas should be maintained at 50–70 °F, refrigerated storage areas should be maintained at 41 °F or below, and frozen storage areas should be maintained at 0 °F – -10 °F.

Food Safe Storage Practices include the following:

- Storage areas should be clean.
- All food and supplies must be at least 6 inches off the floor.
- Keep food in original containers or labeled containers approved for storage.
- Label all food with the product name and delivery date.
- Use the FIFO method to rotate stock.
 - Dating products and storing new products behind older products will help to ensure FIFO is being followed.
- Store chemicals in a separate area away from food.
- Check products for spoilage and damage, discard products if spoilage or damage has occurred.
- Store allergen free foods in an isolated area away from other food products.
- Avoid cross contamination.
 - In the cooler store raw and ready to eat food separately.

Ready-to-Eat Foods (Top Shelf)

Lowest Cooking Temperature

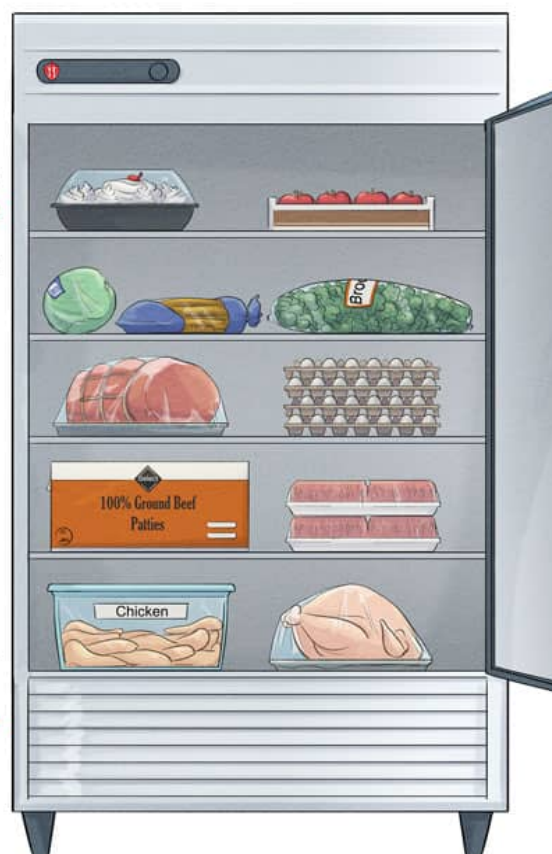
135°F (57°C)
Any food that will be hot held that is not in other categories

145°F (63°C)
Whole seafood; beef, pork, veal, lamb (steaks and chops); roasts; eggs that will be served immediately

155°F (68°C)
Ground, injected, marinated, or tenderized meats; eggs that will be hot held

165°F (74°C)
All poultry (chicken, turkey, duck, fowl); stuffing made with foods that require temperature control; dishes with previously cooked foods (casseroles)

Highest Cooking Temperature



Preparing

Cross contamination is the transfer of bacteria or viruses from hands to food, food to food, or equipment and food contact surfaces to food. Chemical contamination, or hazard, is when chemicals unintentionally come in contact with food. Cross contact occurs when an allergen is accidentally transferred from a food containing an allergen to a food or surface that does not contain the allergen. All three - cross contamination, chemical contamination/hazard, and cross contact - are types of contamination that can happen in a school. School nutrition employees can minimize or eliminate contamination by following the Standard Operating Procedures in their school food safety program.

One of the most common causes of foodborne illness is cross contamination. Cross contamination may occur when 1) a sick employee handles food, 2) raw food contaminates a ready-to-eat food, 3) food contact surfaces are not cleaned and sanitized properly and come in contact with a ready-to-eat food, or 4) equipment is used for multiple foods without cleaning and sanitizing between preparing foods. Chemical contamination may occur if chemicals are improperly handled or if manufacturer instructions are not followed. Cross contact may occur if proper cleaning and food handling procedures are not followed while preparing allergen-free foods.

Food Safe Practices to Prevent Cross- Contamination

Hand-to-Food Cross Contamination

- Wash hands properly, frequently, and at appropriate times.
- Wash hands before putting on single-use gloves and change gloves frequently.
- Wear gloves when handling ready-to-eat foods.
- Cover cuts, sores, and wounds with a clean bandage and a single-use glove.
- Keep fingernails short, unpolished, and clean.
- Do not wear jewelry, except for a plain band such as a wedding ring.
- Do not allow sick employees to work.

Food-to-Food Cross Contamination

- Separate raw animal foods from ready-to-eat foods during receiving, storage, and preparation.
- Separate different types of raw animal foods, such as eggs, fish, meat, and poultry, from each other except when combined in recipes.
- Separate unwashed fruits and vegetables from washed fruits and vegetables and other ready to eat foods.
- Place food in covered containers or packages, except during cooling. Store in the refrigerator or cooler.

Equipment and Food Contact Surface-to-Food Cross Contamination

- Use only dry, cleaned, and sanitized equipment and utensils for food preparation.
- Clean and sanitize work tables, equipment, and cutting boards after each use and before beginning a new task. For example, after slicing ham, the slicer should be cleaned and sanitized before slicing turkey.
- Clean and sanitize surfaces that are handled often, such as refrigerator and freezer handles.
- Maintain a fresh bucket of cleaning solution and a fresh bucket of sanitizing solution in the work area so that cleaning and sanitizing can be done easily.

Chemical Contamination/Hazard

- Store chemicals away from food. Keep chemicals in a locked storage area with access only to authorized employees.
- Use Safety Data Sheets (SDS) provided by the manufacturer to ensure chemicals are stored and used properly.
- Check the concentration of the sanitizing solution with a sanitizing test kit to make sure it is at appropriate levels to sanitize.
- Store chemicals in original containers, never in containers that once stored food.
- Teach employees how to use chemicals.

Cross Contact

- Use color coded utensils, equipment, etc., or designate equipment and utensils for foods that are allergen-free.
- Isolate ingredients that are allergen-free in storage and preparation.
- Prepare allergen-free foods first, wrap and label them (with name, color code, or stickers), and place them on the top storage shelf until service.
- Follow proper handwashing procedures, and wash hands between handling allergen-free foods and foods which contain allergens.
- Properly clean and sanitize all utensils, equipment, and surfaces before preparing allergen-free foods.

Food Safe Practices to Control Time and Temperature

Preparation is an important step in the foodservice process. School nutrition employees can use good food handling practices during preparation to ensure that food temperatures are controlled and the time that foods are in the temperature danger zone is minimized. The temperature danger zone, between 41 °F and 135 °F, is the temperature range in which bacteria grow most rapidly.

Limit the time that foods are in the temperature danger zone during preparation.

- Pre-chill ingredients for cold foods, such as sandwiches, salads, and cut fruits, to 41 °F or below before combining with other ingredients.
- Prepare foods as close to serving times as the menu will allow.
- Prepare food in small batches. For example, when assembling deli sandwiches, remove only enough meat and cheese to prepare 25 sandwiches. Return the sandwiches to the refrigerator and then remove enough meat and cheese to prepare another 25 sandwiches.
- Limit the time for preparation of any batches of food so that the ingredients are not at room temperature for more than 30 minutes before cooking, serving, or returning to the refrigerator.
- Chill all cold foods as quickly as possible.

Washing Fruits and Vegetables

Fresh fruits and vegetables can be contaminated either when they are purchased or if they are handled incorrectly. Thorough washing of fruits and vegetables will minimize the risk of serving a contaminated product to customers. Fresh fruits and vegetables can be exposed to harmful bacteria because of growing conditions and handling by humans. Some fruits such as cantaloupes have a very rough rind that can trap dirt and bacteria. Because these products are not cooked, they can cause foodborne illness if not handled properly.

- Wash hands using the proper procedure before handling fresh fruits and vegetables.
- Wash, rinse, sanitize, and air dry all food contact surfaces, equipment, and utensils that will be in contact with fresh produce. This includes cutting boards, knives, and sinks. Always use sinks designated for food preparation.
- Follow the manufacturer's instructions for proper use of chemicals. For example, using sanitizers at too high a concentration may cause contamination of the produce.
- Wash all raw fruits and vegetables thoroughly before combining with other ingredients, including the following: Unpeeled fresh fruit and vegetables that are served whole or cut into pieces, and Fruits and vegetables that are peeled and cut to use in cooking or served ready-to-eat.
- Wash fresh produce vigorously under cold running water or by using chemicals that comply with the FDA Food Code or your state or local health department. It is not recommended to rewash packaged fruits and vegetables labeled as being previously washed and ready-to-eat.
- Remove any damaged or bruised areas of the fruits and vegetables.
- Label, date, and refrigerate fresh-cut items.
- Serve cut melons within 7 days if held at 41 °F or below.

- Do NOT serve raw seed sprouts to highly susceptible populations such as preschool-age children.

Thawing Foods

Thawing frozen food correctly is important for keeping food safe to eat. The *FDA Food Code* states that the temperature of food should not exceed 41 °F during the thawing process. Cooks must plan ahead so that they can use an appropriate method for thawing.

THAWING METHODS

RUNNING WATER
SUBMERGE FOOD UNDER
RUNNING WATER AT 70F
OR LOWER.



REFRIGERATION
THAW AT 41F OR
BELOW

*Never let
food reach
temperatur
es above
41F for
longer than
4 hours*



Microwave
Food must be cooked
immediately after
thawing. In conventional
cooking equipment



COOKING
THAW FOOD AS PART OF THE
COOKING PROCESS

Cooking

Cooking is a critical control point, or a point at which reaching proper internal temperatures can help ensure that a food is safe to eat. Cooks must know the proper temperatures for cooking food, monitor internal cooking temperatures, and record cooking temperatures. The appropriate temperature for cooking foods is based on temperatures that will kill bacteria associated with that specific food. That is why, for example, poultry products have a higher cooking temperature than beef. It is important to know the temperature requirements for menu items used in your school nutrition program.

**MINIMUM INTERNAL
COOKING TEMPERATURE**

165F FOR 15 SECONDS
 Poultry (whole or ground chicken, duck, turkey)
 Stuffing made with fish, meat and poultry
 Stuffed meat, seafood, poultry, pasta
 Leftovers

155F FOR 15 SECONDS
 Ground Meat
 Injected Meat
 Ground Meat and Seafood (mechanically tenderized)
 Ratites (ostrich and emu)
 Shellfish (for hot service)

145F FOR 15 SECONDS
 SEAFOOD (fish, shellfish and crustaceans)
 Steak/Chops (pork, beef, veal and lamb)
 Commercially Raised Game
 Shell Eggs (for immediate service)

145F FOR 4 MINUTES
 Roast (pork, veal, beef or lamb)

135F (no minimum time)
 Fruit
 Vegetables
 Grains
 Legumes
 (that will be hot held for service)

Holding and Serving

Holding is a point at which maintaining proper temperatures can help ensure that a food is safe to eat. Cooks and servers must know the proper temperature for holding food, monitor the holding process, and record temperatures of foods during holding.

The *FDA Food Code* requires that all cold foods be maintained at 41 °F or below. It also requires that all hot foods be maintained at 135 °F or above. When temperatures of food are between 41F-135F, they are in the temperature danger zone—temperatures at which pathogens grow rapidly. Research has shown that inadequate holding temperatures are a problem in many foodservice operations.

Hot Holding

- Hold hot foods at 135 °F or above.
- Preheat steam tables and hot holding cabinets.
- Schedule food production to minimize the time that food is maintained on a steam table or other hot holding unit.

Cold Holding

- Hold cold foods at 41 °F or below.
- Pre-chill ingredients for items to be served cold.
- Schedule food production to minimize the time that food is maintained on the serving line.
- Use batch preparation for cold items to minimize the time that ingredients and completed foods are at room temperature.

We eat with our five senses, sight, smell, taste, touch, and sound. Serving food at the proper temperature not only enhances the quality of the product, but can also reduce the possibility of a foodborne illness. A single case of foodborne illness can cost a food establishment, their reputation, loss of revenue due to liability, time lost from work, and hungry children without a well-balanced meal.

Good Serving Practices

- Avoid touching ready-to-eat foods with bare hands.
- Use clean and sanitized utensils.
- Hold plates by the edge or bottom, cups by the handle or bottom, and utensils by the handles.
- Keep food at the proper temperature.
- Keep the serving line clean and attractive during serving time.
- Practice good personal hygiene.
- Use disposable gloves appropriately.

- Use clean and sanitized linens, such as cloth napkins, to line a container for the service of food and make sure to replace each time the container is refilled.

Serving Utensils

Ready-to-eat foods will not be cooked further before serving; it is important to handle them properly. School nutrition employees must follow appropriate food handling techniques to ensure that these foods do not become contaminated during preparation, storage, holding, and service to customers. Because ready-to-eat foods will not have further heat treatment to kill microorganisms, special care is needed to decrease opportunities for cross contamination. Use of suitable utensils when handling ready-to-eat foods is one important way to ensure safety.

- Use suitable utensils when handling ready-to-eat foods.
- Wash hands and exposed parts of the arms properly before preparing or handling food, or at any time the hands may become contaminated.
- Use proper procedures for glove use, including washing hands before putting on gloves.
- Use utensils that are clean and sanitized when working with ready-to-eat food. Examples include the following: Single-use gloves, Deli tissue, Foil wrap, and Tongs, spoodles, spoons, and spatulas.
- Change utensils when they become contaminated.

Salad Bars/Food Bars

Food used for food bars can become contaminated, either unintentionally or intentionally. One way unintentional contamination occurs is when bacteria or viruses are transferred from one surface to another (cross contamination). For example, if a customer had a virus on her hand, it could be transferred to the handle of a serving spoon and then transferred to the hands of the next customer who used the spoon. Another way unintentional contamination occurs is when an allergen is accidentally transferred from a food containing an allergen to a food that does not contain the allergen. For example, if a spoon from an allergen containing ingredient was placed into an allergen-free food. Intentional contamination is the willful intent to contaminate a food. While this rarely happens, it can occur.

- Follow personal hygiene and handwashing Standard Operating Procedures.
- Wear gloves for handling ready-to-eat foods such as fresh apples.
- Place all exposed food under sneeze guards.
- Provide an appropriate clean and sanitized utensil for each container on the food bar.
- Change utensils at each meal period or when they are contaminated.
- Keep labeled and wrapped allergen-free foods in an isolated location until ready to give to that child.


- Replace existing containers of food with new containers when replenishing the food bar.
- Assist students and teachers who are unable to properly use utensils.
- Store eating utensils with handles up or in a manner to prevent customers from touching the food contact surfaces.

Cooling


Cooling is a critical control point, or a point at which reaching proper temperatures within an appropriate time period can help ensure that a food is safe to eat. Cooks must know the proper temperatures for cooling food, monitor the temperature of food as it cools, and record cooling temperatures. Important cooling temperatures and times include the following:

1. Hot food must be cooled from 135 °F–70 °F within 2 hours.
2. Hot food must be cooled from 70 °F–41 °F within an additional 4 hours, a total of 6 hours.
3. Foods at room temperature (70 °F) must be cooled to 41 °F within 4 hours.

COOLING FOODS



COOLING TIME



Foods must be cooled from 135F to 41F or lower within 6 hours.

135F-70F within 2 hours
70F-41F within 4 hours

METHODS FOR COOLING

- Ice-Water Bath
- Blast Chiller
- Ice Paddle
- Ice or Cold Water as an Ingredient

CORRECTIVE ACTION


If food is not properly cooled it must be reheated to 165F and cooled again

Factors that effect cooling

- Thickness of food
- Size of food
- Storage container

Tips for cooling

- Cut larger items into smaller pieces
- Divide large containers into smaller containers or shallow pans
- Use stainless steel pans





Cooling Food Video Guide

Directions: Complete the following questions while watching the cooling video.

1. What are some factors that could impact cooling time?
2. What cooling techniques were suggested in the video?
3. What is the recommended depth of a pan to cool food?
4. What is the maximum time allowed to cool foods from 135F to 41F?
5. What is the proper corrective action if food is not cooled quickly enough to meet regulations?

Reheating

Reheating is a critical control point, or a point at which reaching proper internal temperatures can help ensure that a food is safe to eat. Cooks must know the proper temperature for reheating food, monitor the reheating process, and record temperatures of reheated foods. The *FDA Food Code* requires that all leftover foods or foods that have a precooked or leftover food as an ingredient be reheated to 165 °F for 15 seconds within 2 hours.


- Reheat the following foods to 165 °F for 15 seconds within 2 hours:
 - Any food that has been cooked and cooled, and will be reheated for hot holding.
 - Leftovers reheated for hot holding.
 - Products made from leftovers, such as soup or casseroles.
 - Precooked, processed foods that have been previously cooled.
- Reheat foods rapidly using the correct equipment. When reheating food, the total time the temperature of the food is between 41 °F and 165 °F cannot exceed 2 hours.
- Serve reheated food immediately or place in an appropriate hot holding unit.

Transporting

Many school nutrition programs prepare food at one site and transport it to another site for service. The transporting process adds to the complexity of a school nutrition program and provides another step in the foodservice process that must be performed correctly to ensure temperature maintenance and to minimize cross contamination.

Transporting adds time to holding food. The *FDA Food Code* requires that all hot foods be maintained at 135 °F or above and that all cold foods are maintained at 41 °F to minimize opportunities for bacterial growth. Proper equipment and processes must be in place so that proper temperatures are maintained and there is no cross contamination.

- Maintain temperatures of products.
 - Keep frozen foods frozen.
 - Keep cold foods at 41 °F or below.
 - Keep hot foods at 135 °F or above.
- Transport food in containers and carriers that have been approved by the National Sanitation Foundation (NSF)® or by the state or local health department.
- Prepare food carriers before use.
 - Clean all exterior surfaces.
 - Wash, rinse, and sanitize all interior surfaces.
 - Preheat or pre-chill according to manufacturer's recommendations.

- 
- Store food in containers suitable for transportation. Containers should be:
 - Rigid and sectioned so that foods do not mix.
 - Tightly closed to minimize spillage and to retain temperature.
 - Nonporous to avoid leakage.
 - Easy-to-clean or disposable.
 - Approved for food use.

Food Safety Programs

School nutrition programs are required to have a food safety program based on HACCP principles. HACCP is a comprehensive written food safety program that brings together all of the basic food safety practices that emphasize good food safety and prevention of foodborne illness. It focuses on three key areas: time and temperature control, personal hygiene, and prevention of contamination.

Objectives

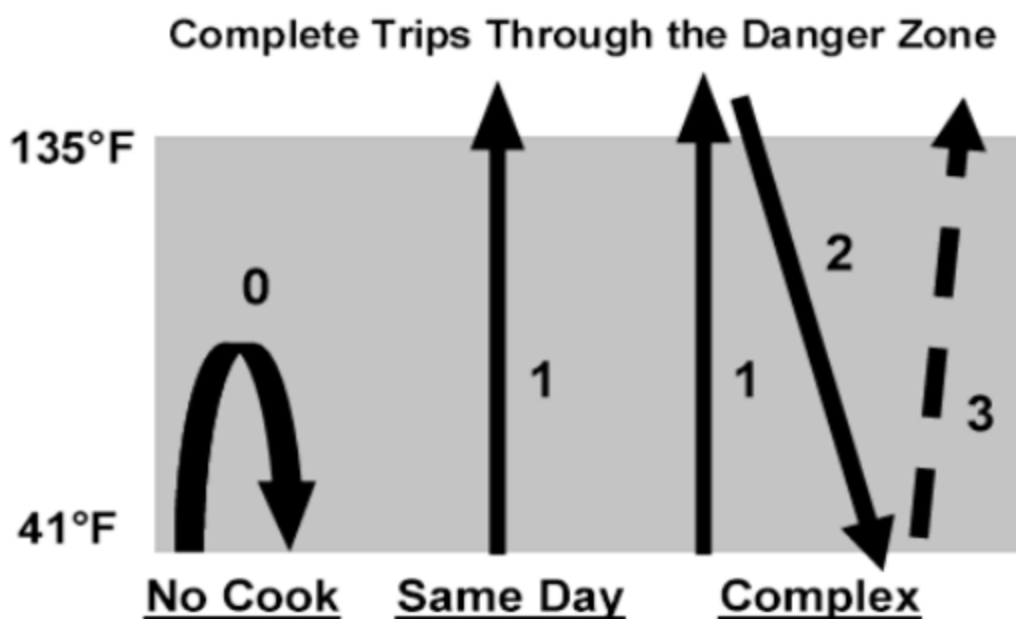
1. List components of a food safety program.
2. Describe the Process Approach.
3. Identify menu items that fit into the Process Approach categories.



Process Approach

The Process Approach to develop a food safety program categorizes menu items into three broad preparation processes based on the number of times the food passes through the temperature danger zone. School nutrition employees must monitor foods at various steps in the foodservice process and must control temperatures to ensure food safety.

Menu items served must be categorized into three processes: no cook, same day service, and complex preparation. No cook menu items do not go through the temperature danger zone, same day service menu items go through the temperature danger zone one time, and complex menu items pass through the temperature danger zone three times.




No Cook

Menu items in the no cook process do not make a complete trip through the temperature danger zone. These are items such as deli sandwiches and salads that are prepared and served cold. It is important to follow standardized recipes. If an ingredient is changed—for example cooking eggs on site rather than using precooked eggs—the item can change from a no cook item to a complex food preparation item.

Same Day Service

Menu items in the same day service process go through the temperature danger zone one time. These are items such as hamburgers, pizza, chicken nuggets, and scrambled eggs. It is



important to note that the same menu items may be grouped into different processes depending on how the item is prepared and the available equipment. For example, chili could be a same day service item in one school nutrition program and a complex process item in another operation.

Complex

Menu items in the complex process go through the temperature danger zone, during cooking, cooling, and when foods are reheated. Examples of these items will vary in different schools, but may include turkey roasts, taco meat, chili, and leftovers. It is important to note that the same menu items may be grouped into different processes depending on how the item is prepared and the available equipment. For example, chili could be a complex item in one school nutrition program and a same day service process item in another program. The complex food preparation process includes foods that require time and temperature control and have been cooled.

Control time and temperature of complex menu items during cooking, cooling, reheating, and hot holding.

- Cook complex service menu items to the appropriate internal cooking temperatures.
 - For example, chicken should be cooked to 165 °F for 15 seconds and hamburger patties should be cooked to 155 °F for 15 seconds.
- Cool food properly.
 - Cool food from 135 °F–70 °F in 2 hours.
 - Cool food from 70 °F–41 °F in an additional 4 hours.
 - Use immediate and appropriate corrective actions when cooling guidelines are not met.
- Reheat food to 165 °F for 15 seconds within 2 hours.
- Hold complex menu items at 135 °F or above.
- Limit the time that complex menu items are in the temperature danger zone.

Process Approach Video Guide

Directions: Complete the following questions while watching the Process Approach video.

1. The _____ approach is recommended for developing a food safety program.
2. Draw what happens to the temperatures for foods in each of the three process categories.

135 °F

41 °F

No Cook

Same Day Service

Complex

3. List the menu item that was used as an example of a
 - a. No Cook Item _____
 - b. Same Day Service Item _____
 - c. Complex Food Preparation Item _____
4. List the steps where temperature should be controlled.

_____, _____, _____,

_____, _____, _____,

_____, _____

Key Points for Developing a Food Safety Program

1. A food safety plan is needed at each site where food is prepared and served.
2. Each site must be evaluated.
3. Menu items should be sorted into process categories.
4. Temperatures must be controlled at each process step.
5. It is important to take and record temperatures.

Menu Items by Process Approach category

Directions: Place an X in the appropriate column next to each menu item.

Menu Item	No Cook	Same Day Service	Complex Food Preparation
Egg patty			
Milk			
Nachos with meat and cheese			
Stacked turkey with Swiss on bun			
Seasoned corn			
Baked potato wedges			
Breakfast pizza			
Hot dogs			
Lettuce			
Spaghetti sauce			
Tacos			
Bean burritos			
Cole slaw			
Baked beans			
French toast sticks			
Sliced baked turkey			
Mashed potatoes			
Green garden salad			
Tuna salad sandwiches			
BBQ pork sandwich			
Scrambled eggs			
Fresh apple			
Hot rolls			

Norovirus

Norovirus is a virus that causes illness sometimes referred to as the “stomach flu,” although it is not related to the flu (or influenza). Infection with norovirus affects the stomach and intestines, causing an illness called gastroenteritis. Norovirus was named for Norwalk, Ohio, in 1968 after an outbreak in a school. More than half of all foodborne illness outbreaks are caused by norovirus.

What are the symptoms of norovirus?

Norovirus symptoms include nausea, vomiting, diarrhea, and stomach cramps. Some people also complain of headache, fever or chills, and muscle aches. Symptoms usually begin 12-48 hours after contact with the virus and usually last for 1-3 days. During that time, people can feel very ill and often vomit violently or have explosive diarrhea many times a day.

How is norovirus spread?

Norovirus is found in the stool or vomit of infected people. Ill people are contagious for up to three days after their symptoms resolve. The virus is very contagious and easily spread by:

- Eating food or drinking liquids contaminated with norovirus.
- Touching surfaces or objects contaminated with norovirus, and then placing a hand to the mouth. For example, a child picks up tongs on a salad bar previously handled by a child with norovirus, takes some carrots, and then eats the carrots with hands. In another example, a school nutrition worker handles a door knob infected with norovirus and then serves food.
- Having direct contact with stool or vomit from a person who is infected.
- Having contact with tiny droplets of vomit that becomes airborne during a vomiting incident or from splashing. Droplets can travel through the air up to 25 feet to land on food and food contact surfaces.

Why is norovirus important for school nutrition employees?

People working with food who are sick with norovirus can easily make others ill. A sick child nutrition employee can – without meaning to – contaminate the food he or she is handling. Many of those eating the contaminated food may become ill, resulting in an outbreak. People infected with norovirus are contagious from the moment they begin feeling ill to at least 3 days after symptoms are gone. Some people may be contagious for as long as 2 weeks after recovery. It is important for people to use good handwashing and other hygienic practices, especially after they have recently recovered from norovirus illness.

How can Norovirus be prevented?

- Frequent handwashing with soap and water, especially after each toilet visit, before eating or preparing food, before putting on clean gloves, and after changing diapers in child care settings.
- Preventing bare hand contact with all ready-to-eat and ready-to-serve foods.
- Reporting illness symptoms to your manager and/or director.
 - Vomiting, diarrhea, jaundice or yellowing of the skin or eyes, a sore throat with fever, and infected cuts on hands, wrists, or exposed arms.
 - If you have been diagnosed with or in contact with others having foodborne illnesses, which in addition to norovirus includes Hepatitis A, Shigella, E. coli, Salmonella Typhi, and non-typhoidal Salmonella.
- Staying home when you are ill. For illnesses like norovirus, your manager will ask that you stay home until your symptoms have been resolved for two days.

Bodily Fluid Clean Up Kit

All body fluids, including vomit, stool, and blood, should be treated as infectious material. Germs, like norovirus, that are spread through body fluids cannot be killed effectively using common foodservice detergents and sanitizers. If a worker or customer has vomited or contaminated a surface with body fluid, use of special procedures and a special disinfectant are required. It is also important to protect yourself from illness. A Body Fluid Cleanup Kit must contain the correct supplies to protect you and thoroughly disinfect the area. Keep the kit ready for immediate use.

What should be included?

1. Personal Protective Equipment (PPE)

A Body Fluid Cleanup Kit contains PPE to safeguard the individual responding to an incident. These items protect clothes and shoes from contamination. The equipment also protects the face from splashing and airborne particles, and hands from direct contact with body waste. Each kit should contain:

- Twelve (12) pairs of disposable, nonabsorbent, medical grade gloves.
- One (1) face mask with face shield or goggles.
- One (1) pair of shoe covers.
- One (1) disposable gown.

2. Cleaning Supplies

A Body Fluid Cleanup Kit contains supplies to safely and thoroughly remove and dispose of the waste. Cleaning supplies to include:

- Multiple packages of disposable paper towels.
- Bucket and chemical spray bottle.

- A designated mop head for body fluid cleanup or disposable mop heads.
- Plastic garbage bag and twist-ties.
- Disposable scoop, small shovel, or dustpan.
- Sand, cat litter, or commercial absorbent powder.

3. Disinfectant

Common foodservice detergents and sanitizers are not effective in killing all germs that can be spread through body fluids. A special disinfectant is necessary. The Environmental Protection Agency (EPA) keeps a list of registered disinfectants on its website.

4. Standard Operating Procedures (SOPs)

The kit should contain written procedures for the safe use of the Body Fluid Cleanup Kit.

Identify the Components of the Body Fluid Clean Up Kit.

Directions: Below are items in the body fluid clean up kit. Place an X in the column that best describes each item.

Items	PPE	Cleaning
Bucket and/or spray bottle		
Disposable gown		
Effective disinfectant*		
Face mask with face/eye shield		
Gloves		
Paper towels		
Plastic garbage bag		
Sand, cat litter, or commercial absorbent powder		
Scoop, small shovel, or dustpan		
Shoe covers		

Assembling a Body Fluid Cleanup Kit, continued

(Sample SOP)

2. Assemble a Body Fluid Cleanup Kit using the materials purchased in step 1 of this SOP:
 - Place the following supplies into a waterproof container:
 - Twelve (12) pairs of disposable, non-latex gloves
 - One (1) disposable gown or apron
 - One (1) pair of disposable shoe covers
 - One (1) face mask with eye protection, or goggles
 - One (1) package of disposable paper towels
 - Two (2) disposable mop heads
 - One (1) disposable flat-edge scoop, or equivalent
 - Two (2) dry cups of sand, or liquid spill absorbent material
 - Four (4) Plastic garbage bags and twist-ties
 - Procedures for use of the Body Fluid Cleanup Kit. For example, the Food Safety SOP Cleaning and Disinfecting Body Fluid Spills
 - Seal the waterproof container with a lid and label with the date.
*Pre-assembled commercial kits containing recommended supplies are available through many vendors. Check with your chemical supply company or foodservice distributor.
3. Store the Body Fluid Cleanup Kit with an unopened container of household bleach, or the EPA-approved disinfectant; the bucket designated for chemical use; and the spray bottle in an area designated for chemical storage and/or cleaning supplies.
4. Train school nutrition employees on how to use PPE and the contents of the Body Fluid Cleanup Kit.

MONITORING:

The school nutrition manager will ensure that:

1. The Body Fluid Cleanup Kit is properly assembled at all times. This includes ensuring that supplies and chemicals have not expired.
2. Excess materials and supplies are available to immediately restock the Body Fluid Cleanup Kit after use.
3. The Body Fluid Cleanup Kit, and associated chemicals and supplies, are stored in accordance with this SOP.
4. School nutrition employees are trained to properly use:
 - PPE, and
 - The Body Fluid Cleanup Kit.

CORRECTIVE ACTION:

The school nutrition manager will:

1. Properly assemble/restock the Body Fluid Cleanup Kit immediately. Replace expired/out-of-date supplies.
2. Provide excess materials and supplies to enable immediate restocking of the Body Fluid Cleanup Kit.

Assembling a Body Fluid Cleanup Kit, continued

(Sample SOP)

3. Retrain school nutrition employees in proper storage of the Body Fluid Cleanup Kit, and associated chemicals and supplies.
4. Retrain/educate school nutrition employees in how to properly use PPE and the Body Fluid Cleanup Kit.

VERIFICATION AND RECORD KEEPING:

The school nutrition manager will:

1. Once per month, check the Body Fluid Cleanup Kit to ensure that it is properly assembled, and create and complete a log to document that the monthly check occurred. Keep the log on file for a minimum of one year.
2. Complete a Damaged or Discarded Product Log when expired/out-of-date supplies are discarded. Keep the log on file for a minimum of one year.
3. Document training sessions for school nutrition employees in proper use of PPE and the Body Fluid Cleanup Kit using an Employee Food Safety Training Record.

DATE IMPLEMENTED: _____ **BY:** _____

Using a Bodily Fluid Clean Up Kit

The first step is to remove all individuals within a 25-foot radius from the area and ask them to immediately wash their hands. When someone vomits, germs such as norovirus can spread by air and contaminate surfaces and food as far as 25 feet away. If someone eats these foods or touches these surfaces and accidentally ingests the particles, they can become sick. Potentially contaminated clothing should be removed as soon as possible. Then the clothing should be machine washed in hot water using the longest available cycle and dried on the hottest setting. To block entry into the contaminated area, an employee should be stationed near the entrance. Also, it is important to stop all foodservice operations including preparing and serving food, and dispose of all uncovered exposed food within the 25-foot radius. In addition, discard intact and sealed containers or single-service items within the 25-foot radius if it is not practical to disinfect the surface.

1. Use Personal Protective Equipment (PPE)

Put on the PPE to protect your clothes and shoes from contamination, to protect your face from splashing and airborne particles, and to protect your hands from direct contact with body fluid:

1. Put covers over your shoes.
2. Pull the disposable gown over your clothes.
3. Put on the face mask with a face shield or goggles.
4. Put on a pair of disposable, nonabsorbent, medical grade gloves. Consider double gloving (wearing two gloves on each hand).
5. Replace gloves if they tear or become visibly soiled.
6. Keep hands away from your face while wearing gloves.

2. Contain Waste


Cover the body fluid spill with disposable paper towels, and/or sand, cat litter, or liquid spill absorbent material in the kit.

3. Remove Waste

Remove the solid waste and absorbent material using additional paper towels and a disposable scoop, small shovel, or dust pan. Use care to prevent splashing or contact with other surfaces. Put the contaminated material in the plastic garbage bag. Dispose of the gloves in the garbage bag, and thoroughly wash hands with soap and running water for 20 seconds before putting on clean gloves.

4. Clean Area

Clean the area with disposable paper towels or mop, detergent, and water. This includes surfaces that came into direct contact with body fluids, and surfaces that may have been contaminated with body fluids. Before disinfected, all surfaces should be thoroughly



cleaned (i.e., not visibly soiled). Dispose of the paper towels and mop head, if disposable, in the garbage bag. Remove and dispose of gloves into the garbage bag. Wash hands and put on new gloves.

5. . Mix Disinfectant

Mix a fresh container of disinfectant to the recommended concentration. Transfer solution to a labelled spray bottle.

6. Disinfect Area

Using a spray bottle, saturate the cleaned area with disinfectant and surrounding 25-foot radius area, including food contact surfaces. Follow the manufacturer's directions for concentration and contact time. If a 5,000 ppm bleach solution is used for disinfecting, apply for a contact time of 5 minutes. Make sure the area is well ventilated.

7. Rinse Area

Rinse surfaces with clean water and paper towels and/or a disposable mop head. Allow surfaces to air dry. Dispose of the paper towels and/or disposable mop head in a plastic garbage bag. Remove gloves. Dispose of gloves in a plastic garbage bag, wash your hands, and put on new gloves.

8. Discard Any Contaminated Food

9. Clean Tools, Remove PPE and Dispose of Waste

10. Wash Up

If necessary, remove and bag soiled clothing. These items should be machine washed in hot water using the longest available cycle and dried on the hottest setting. Wash hands, exposed arms, and face with germicidal soap. Apply hand sanitizer to hands. Put on fresh clothing, if necessary. Wash, rinse, and sanitize all food contact surfaces.

Cleaning and Disinfecting Body Fluid Spills

(Sample SOP)

PURPOSE: This standard operating procedure (SOP) should be implemented to safely and properly respond to all incidents requiring cleaning and disinfecting of body fluid spills. Body fluids – including vomit, diarrhea, and blood – are considered potentially infectious. Employees should always wear personal protective equipment when cleaning and disinfecting body fluid spills.

SCOPE: This procedure applies to school nutrition employees that would clean a bodily fluid spill.

KEY WORDS: Body Fluid Spill, Cleaning, Disinfecting, Body Fluid Cleanup Kit, Norovirus

INSTRUCTIONS:

1. Contain the affected area
 - Discontinue foodservice operations if spill occurred in food preparation or service areas.
 - Refer to the school district's Alternate Meal Service SOP to safely continue meal service.
 - Block off the area of the spill from staff and students until cleanup and disinfection are complete. For incidents involving vomit, contain all areas within 25 feet of the spill.
 - Send sick staff and students to the school clinic/nurse for assistance.
 - Exclude (i.e., send home) school nutrition employees with symptoms of vomiting or diarrhea from foodservice operations. Refer to the school district's Exclusions and Restrictions for Ill or Infected School Nutrition Employees.
 - Allow only school nutrition employees and/or custodial staff designated to clean and disinfect body fluid spills in the affected area. If the spill is in a non-foodservice area, school custodial staff should handle the cleanup.
2. Retrieve the Body Fluid Cleanup Kit.
 - Refer to the Food Safety Sample SOP *Assembling a Body Fluid Cleanup Kit*.
3. Put on personal protective equipment (PPE), including:
 - Disposable, non-latex gloves. Gloves should be vinyl or nitrile (rubber), and non-powdered.
 - Consider double gloving (wearing two gloves on each hand). Replace gloves if they tear or become visibly soiled. Keep hands away from face while wearing gloves.
 - A disposable gown or apron, and disposable shoe covers.
 - A face mask with eye protection, or goggles.
4. Remove visible body fluid
 - Pour sand, or liquid spill absorbent material, on body fluid spill.
 - Use a disposable scoop, or equivalent, and disposable paper towels to remove the sand and body fluid from the affected surfaces.
 - Dispose of the sand, body fluid, disposable scoop, and paper towels in a plastic garbage bag.

Cleaning and Disinfecting Body Fluid Spills, continued (Sample SOP)

- Remove gloves. Dispose of gloves in a plastic garbage bag.
- Wash hands.
- 5. Clean the affected area
 - Put on new disposable gloves. Consider double gloving.
 - Clean the affected area with soap and water, and paper towels and/or a disposable mop head. This includes surfaces that came into direct contact with body fluids, and surfaces that *may* have been contaminated with body fluids. **Before disinfection (Step #6), all surfaces should be thoroughly cleaned (i.e., not visibly soiled).**
 - Dispose of the paper towels and/or disposable mop head in a plastic garbage bag.
 - Remove gloves. Dispose of gloves in a plastic garbage bag.
 - Wash hands.
- 6. Disinfect the affected area
 - Put on new disposable gloves. Consider double gloving.

Non-absorbent Surfaces (i.e., tile, stainless steel)

 - Prepare a chlorine bleach disinfecting solution.*
 - Wear all PPE, including the face mask with eye protection, or goggles. Ensure that area is well ventilated (mix solution outdoors if necessary).
 - Prepare solution immediately before applying it to surfaces using unscented, household bleach (8.25% sodium hypochlorite concentration)** and water. Once opened, household bleaches lose their effectiveness after 30 days. Use anew, unopened bottle of bleach every 30 days for preparing solutions.
 - Mix 4 tablespoons of bleach with 1 gallon of water (solution concentration of about 1000 parts per million (ppm)) in a bucket designated for chemical use. It is recommended that 1 cup of bleach per 1 gallon of water be used on surfaces that have had direct contact with body fluids (5,000 ppm).
 - Transfer solution to a labelled spray bottle.
 - Using the spray bottle, generously apply the disinfecting solution to affected surfaces, including surfaces that came into direct contact with body fluids, and surfaces that *may* have been contaminated with body fluids.
 - For incidents involving vomit, disinfect all areas and surfaces within 25 feet of the spill.
 - Use in a well-ventilated area.
 - Disinfect high touch areas (e.g., door handles, toilets, dispensers, carts, sink faucets, telephones, etc.) throughout the foodservice area, cafeteria dining areas, break rooms, and restrooms using disinfecting solution and paper towels.
 - **Leave the disinfecting solution on affected surfaces for a minimum of 5 minutes.** If another EPA-approved disinfectant is used, follow the manufacturer's instructions.
 - Rinse surfaces with clean water, and paper towels and/or a disposable mop head.
 - Allow surfaces to air dry.
 - Dispose of the paper towels and/or disposable mop head in a plastic garbage bag.
 - Remove gloves. Dispose of gloves in a plastic garbage bag.
 - Wash hands.

Cleaning and Disinfecting Body Fluid Spills, continued

(Sample SOP)

*EPA-approved disinfectants may be used instead of chlorine bleach solutions. EPA-approved disinfectants appropriate for vomit and diarrhea may be found at www.epa.gov/pesticide-registration/list-g-epa-registered-hospital-disinfectants-effective-against-norovirus. CDC guidelines on norovirus outbreak management and disease prevention recommend using chlorine bleach solutions on hard surfaces when possible. EPA-approved disinfectants appropriate for blood may be found at www.epa.gov/pesticide-registration/list-d-epas-registered-antimicrobial-products-effective-against-human-hiv-1.

**Household bleach products have previously been available in 5.25% and 6% sodium hypochlorite concentrations. Ensure you are using the correct solution depending on the concentration of bleach you have. Best practice is to use high strength chlorine test strips to ensure a chlorine concentration of 1,000 - 5,000 ppm. Check with your chemical supplier to obtain test strips.

Absorbent Surfaces (i.e., carpet, upholstery, cloth)

- Disinfect with a chemical disinfectant when possible.
 - Steam clean for a minimum of 5 minutes at 170 °F.
 - Launder in a mechanical washing machine on the hottest water setting, and dry in a mechanical dryer on a high heat setting.
 - Dispose of disinfecting materials in a plastic garbage bag, as appropriate.
 - Remove gloves. Dispose of gloves in a plastic garbage bag.
 - Wash hands.
7. Discard potentially contaminated food.
- Put on new disposable gloves. Consider double gloving.
 - Dispose of exposed food and food in containers that may have been contaminated by body fluid in a garbage bag.
 - For incidents involving vomit, discard all food within 25 feet of the spill. Food in intact, sealed containers
 - Have a second employee, one who is not directly contacting potentially contaminated food, inventory the discarded food in a *Damaged or Discarded Product Log*.
 - Remove gloves. Dispose of gloves in a plastic garbage bag.
 - Wash hands.
8. Dispose of PPE, and cleaning and disinfecting materials.
- Put on new disposable gloves. Consider double gloving.
 - Securely tie garbage bags containing all materials disposed of in steps 4-7 of this SOP.
 - Place garbage bags in a second garbage bag (double bag).
 - Clean all non-disposable items (bucket, mop handle, etc.) with soap and water; then disinfect. Allow these items to air dry.
 - Remove PPE, including disposable gloves, and place in second garbage bag.
 - Securely tie the second garbage bag.
 - Discard the bag(s) in the disposal area identified by school officials.

Cleaning and Disinfecting Body Fluid Spills, continued

(Sample SOP)

- Remove soiled clothes, if necessary, and place clothes in a separate garbage bag. Securely tie the garbage bag. Keep clothes in the tied garbage bag until they can be adequately laundered.
- 9. Wash hands, arms and face with soap and water in a restroom sink or hand sink. Put on clean clothing, if necessary. Apply ethanol based hand sanitizer to hands.
- 10. Wash, rinse, and sanitize potentially contaminated food contact surfaces. Include food contact surfaces that were disinfected in step 6 of this SOP, and food contact surfaces that contained food discarded in step 7 of this SOP. Refer to the Food Safety Sample SOP *Cleaning and Sanitizing Food Contact Surfaces*.
- 11. Restock the contents of the Body Fluid Cleanup Kit.
- 12. Complete an incident report.

MONITORING

The school nutrition manager will:

1. Ensure that the Body Fluid Cleanup Kit is properly assembled at all times.
2. Ensure that at least one school nutrition employee per shift is:
 - Designated and trained to implement this SOP, and
 - Trained in the use of the Body Fluid Cleanup Kit.
3. Ensure that school nutrition employees are:
 - Educated on illnesses and symptoms that must be reported to managers.
 - Monitored for signs and symptoms of illness.

CORRECTIVE ACTION

The school nutrition manager will:

1. Restock the Body Fluid Cleanup Kit immediately. Replace expired/out-of-date supplies.
2. Retrain designated school nutrition employees in application of this SOP, and use of the Body Fluid Cleanup Kit.
3. Retrain/educate school nutrition employees in the school district's *Exclusions and Restrictions for Ill or Infected School Nutrition Employees*. Restrict or exclude ill school nutrition employees in accordance with SOPs.

VERIFICATION AND RECORD KEEPING

The school nutrition manager will:

1. Verify that an incident report was completed. Keep incident report on file for a minimum of one year.
2. Verify that Damaged or Discarded Product Log was completed. Keep log on file for a minimum of one year.
3. Document training sessions for school nutrition employees on applicable SOPs using an *Employee Food Safety Training Record*.

APPROVED BY: _____ **DATE:** _____

Resources

1. Arkansas Food Code
https://www.healthy.arkansas.gov/images/uploads/pdf/RULES_PERTAINING_TO_RETAIL_FOOD_ESTABLISHMENTS_Effective_9-7-2019_with_signature.pdf
2. FDA Food Code
<https://www.fda.gov/food/retail-food-protection/fda-food-code>
3. Flash of Food Safety, USDA.
<https://www.fns.usda.gov/ofsf/food-safety-flashes#:~:text=A%20Flash%20of%20Food%20Safety,practically%20apply%20safe%20food%20practices.&text=Employees%20can%20earn%2015%20minutes,five%20videos%20in%20the%20series.>
4. Food safety Plan, Arkansas Department of Education- Division of Elementary and Secondary Education, Child Nutrition Unit.
https://dese.ade.arkansas.gov/Files/20201103133934_Food_Safety_Plan_Revised_2020.pdf
5. Institute of Child Nutrition Food Safety for Schools.
<https://theicn.org/icn-resources-a-z/food-safety>
6. Institute of Child Nutrition Norovirus in Schools.
<https://theicn.org/icn-resources-a-z/food-safety>